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E-COMMERCE PAYING OFF

Online auction services thriving

By Sharon Machlis

WEIRTON STEEL CORP. used to fax information about odd lots of leftover steel to 50 or so of its customers, hoping someone might buy. Now, the Weirton, W. Va.-based steelmaker posts that excess inventory on its World Wide Web site and auctions it off — turning what used to be nuisance products into $50 million in annual sales.

ELECTRONIC BUSINESS

"We've doubled the number of customers we have," said Chief Information Officer Patrick Stewart. "We actually signed up customers that were 50 miles away that we didn't know were there." And by increasing the number of buyers, prices have gone up, Stewart

Online auction, page 17

Customer service on 'net cuts costs

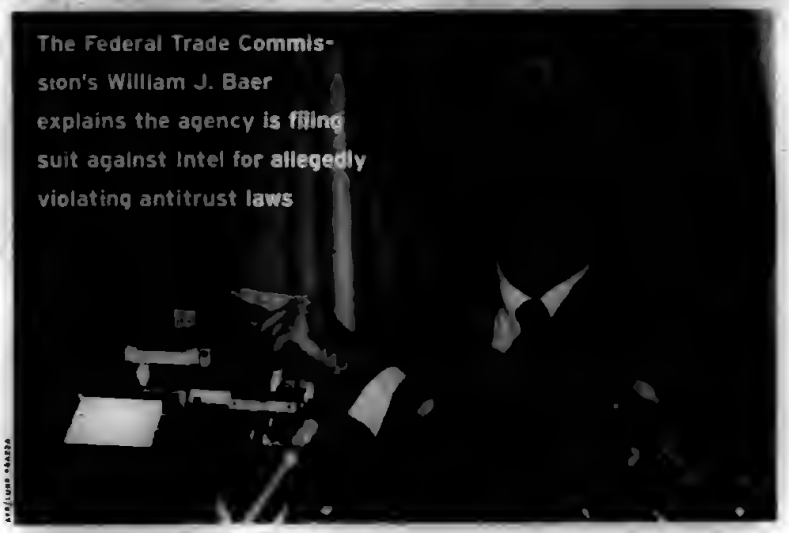
By Barb Cole-Gomolski and Carol Sliwa

IF YOU WANT to find out whether a physician accepts your health insurance or if your electricity needs to be connected following a move, chances are you can do it over the World Wide Web. Or will be able to soon.

That's because more and more companies are saving money by conducting customer service via the Web. According to Forrester Research, Inc. in Cambridge, Mass., companies can trim 43% off their customer-service costs by offering some service online.

The savings typically result from staff reductions and lower telephone costs because customers are dialing in over the

Customer service, page 112



The Federal Trade Commission's William J. Baer explains the agency is filing suit against Intel for allegedly violating antitrust laws

FTC fires salvo at Intel

By April Jacobs and Kim Girard

LAST WEEK'S antitrust filing against Intel Corp. is expected to produce little substantive change for PC makers or users, although most bets are on the emergence of a kinder, gentler Intel if the Federal Trade Commission's lawsuit prevails.

"When the dust settles, not much is going to be different," said Mel Thomsen, an analyst at Sunnyvale, Calif.-based Micro-Design Resources. "Intel may do business a little differently, though, by being a little more liberal and less restrictive in terms of information flow."

Longer term, there is some concern that if the FTC succeeds in its attempts to alter the ability of the Santa Clara, Calif., chip maker to control its own intellectual property, that could hurt the pace of research and development in the industry as a whole.

The FTC case against Intel, filed last week, essentially alleges that Intel used monopoly power to illegally withhold key information from competitors. Intel disagrees, saying the company is completely within its

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Compaq merger OK'd, ending 41-year Digital run. Page 4

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Mechanics use Hyundai extranet to order parts. Page 6

Mainframe migrations
IBM offers VM, VSE shops deals to buy OS/390. Page 8

Keeping talent in tough times

By Barb Cole-Gomolski

HOLDING ON to information systems talent is hard enough. But when a company merges, goes on the block or hits the skids, IS departments have to go into overdrive to keep valued workers from heading for the door.

Retention bonuses, raises and stock options have become common ways to hang on to IS talent during transition periods.

Talent, page 112

Bank mergers: Hard lessons

The nation's banks continue to merge at a torrid pace — witness last week's marriage of Wells Fargo and Norwest (see news story, page 6). But for technology managers, the mergers require speedy resolution of systems and people issues — or else customer service and the bottom line suffer.

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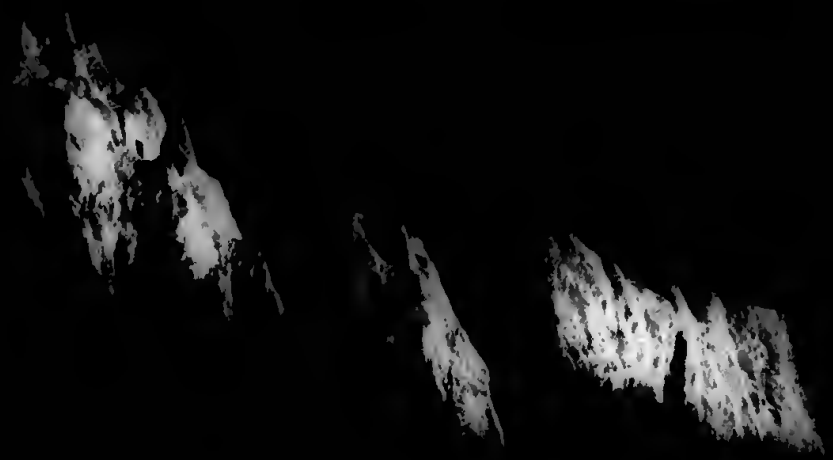

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UP FRONT

R.I.P. Digital

It was a bittersweet experience for me last week to see Digital Equipment become formally subsumed into Compaq and cease to exist. Digital's torturous decline is testament to how brutally this industry punishes companies that misjudge shifts in the market.

Digital was, first and always, an engineer's company, with all the pride, brilliance and arrogance that entails. It tolerated what was by most accounts a lot of waste and overhead so that its technologists could build products that were best in class.

What Digital's leadership failed to see, though, was the shift in customer preferences to flexibility over performance. And as Hewlett-Packard, Sun and, yes, even Compaq began to exploit the shift toward open systems in the late 1980s, Digital stubbornly persisted in its belief that buyers would continue to pay a premium to have the best.

Digital's enemy wasn't IBM. Its enemy was choice.

In hindsight, we can see that Digital made a lot of mistakes: its late adoption of Unix, its futile pursuit of the Alpha chip, its dismissive attitude toward PCs and its ill-fated entry into the mainframe business. But at the time, none of those seemed so crazy. Digital wanted to become another IBM, and it doggedly followed IBM's blueprint even as that model was crumbling beneath them both. Digital's enemy wasn't IBM. Its enemy was choice.

It's ironic that Compaq may actually succeed where Digital failed: re-creating the model of the vertically integrated hardware companies that dominated the industry for so long.

And in a supreme twist of fate, Digital's biggest contribution to that may be the global service organization it built to support the products that, ultimately, failed to sustain it in the marketplace.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE

"I saw the flames when they started, too. I just thought it was part of the exhibit."

E-Mail Rich Tennant at thewave@tiac.net

IE 5.0 stakes out new turf

▸ *Developer preview features dynamic properties, cascading style sheets*

By Carol Sliwa

MICROSOFT CORP. last week posted a developer preview of its Internet Explorer 5.0 World Wide Web browser featuring new technologies designed to assist Web developers. But the preview release uses nonstandard extensions that will work only in Microsoft's browser.

Rival Netscape Communications Corp., which next week is expected to announce an updated version of its Communicator 4.0 groupware client/browser, indicated that it has no intention of fighting this latest version of the browser wars.

"What developers keep telling us is that you have to get everything standardized because we're not going to write to two browsers," said Eric Behn, a Netscape product manager.

Microsoft defended its use of the nonstandard technology, saying it has submitted the new elements to appropriate standards bodies for consideration. But there is no assurance that the groups will adopt Microsoft's technologies. One such group, the World Wide Web Consortium, said it hasn't yet accepted Microsoft's new technologies as proposed standards.

PACKAGE HIGHLIGHTS

New elements in Internet Explorer 5.0 include the following:

- Dynamic Hypertext Markup Language behaviors that let developers build reusable scripts that Web pages can reference.
- Dynamic properties, which let developers define the values of a Web page element relative to any other element on the page.
- Support for multiple cascading style sheet classes, which makes it easier for a developer to let different actions occur on the same Web page element, such as a button.

Developers now have three choices: Build Web pages geared toward Microsoft's new technology, create pages for Netscape's browser or focus on least-common-denominator sites that will work in both browsers.

"Companies that implement the least-common-denominator approach will leave themselves exposed to companies that bend over backward to provide a great user experience using the latest bells and whistles for each browser," warned Tim Sloane, an analyst at Aberdeen Group, Inc. in Boston. But others said business-minded Web sites would be well-advised to take the least-common-denominator approach so that anyone can access their pages.

"We're pretty sure the days of people developing Web sites for one browser or another are gone, no matter what new widget these people come up with, because anyone doing real business on their Internet site is not going to let themselves be inhibited by these religious fanatics," said Harry Fenik, an analyst at Zona Research, Inc. in Redwood City, Calif. □

Nader challenges IBM

▸ *DOJ responds to Microsoft motion*

By Kim S. Nash

ANTITRUST LEGAL maneuvers began in earnest last week as Microsoft sought to seal evidence while the presiding judge limited the number of witnesses and set other ground rules.

Outside the courtroom, consumer activist Ralph Nader tried to loosen Microsoft's grip on the PC operating system market by asking IBM to make OS/2 available for free.

Releasing OS/2 source code to the public would promote an alternative to Windows, Nader wrote to IBM Chairman Louis Gerstner in a letter dated June 8.

IBM's PCs today come preloaded with Windows. Business and consumer buyers must pay up to $199 extra to get IBM's operating system and must install it themselves.

"If you have to fight with them to get a copy [of OS/2], and first you have to pay for Windows, even if you don't want it, why don't they just let it out for free?" asked James Love, director of the Consumer Project on Technology, a nonprofit group that works with Nader. Love also signed the letter.

Ralph Nader asked IBM to give away OS/2

"We're not going to give any OS/2 code away," an IBM spokeswoman said. Nor will IBM respond to the letter or meet with Nader and Love, as they requested, she added.

Meanwhile, the U.S. Department of Justice didn't object to Microsoft's motion to keep secret the evidence in the antitrust case. But the government has in the past revealed bits of documents collected in its investigation of the company. Microsoft said it wants to protect its intellectual property and confidential business practices.

Each side will get to present just six to 12 witnesses in the trial set for Sept. 8. U.S. District Judge Thomas Penfield Jackson ordered last week. He also decreed that testimony must be submitted in writing. □

Online this week

The world is moving to IP as the foundation for IS, and that simplifies everything, Peter Keen writes. **Managing, page 75**

Dynamic HTML will remain a specialty technology until more users update their browsers. **QuickStudy, page 32**

A call-in system keeps Du Pont salespeople in the field, not online, after each sale of a hazmat suit. **Software, page 57**

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Shareholders approve Compaq/DEC merger

▸ *Observers: Outlook for DEC users positive*

By Jaikumar Vijayan

IT SEEMED the misty-eyed "last night" parties held by Digital employees marking the end of their company's independence had barely come to a close before new parent Compaq was planning its postmerger vision.

"Digital had a 41-year history, but in the end all it took was just about 41 minutes" for shareholders to vote it out of independent existence, said Terry Shannon, editor of the newsletter "Shannon Knows DEC."

At a press conference following the formal approval of the merger last week, Houston-based Compaq Computer Corp. outlined a strategy that calls for pushing enterprise services and products acquired in the merger with Digital Equipment Corp., such as 64-bit Alpha chips and, long term, a more "NT-friendly" version of Unix.

For example, Compaq is targeting a "three-point plan" for pushing Windows NT in the enterprise based on high-availability clustering technology. Unix/NT integration middleware and prepackaged application bundles for Windows NT.

Compaq CEO Eckhard Pfeiffer also said Compaq would cut 2,000 jobs across the company. That move, which adds to the 15,000 layoffs already announced at Digital, will prompt the company to take a restructuring charge of between $1.5 billion and $2 billion, he said.

PRODUCT CUTS

Pfeiffer said the merger could result in some discontinued product lines. "We are obviously rationalizing worldwide manufacturing. We are not making any predictions at this point," he said, adding that decisions will be announced within the next few months.

Houston-based Compaq also announced an organizational reshuffle to accommodate senior Digital executives. John Rando, who headed Digital's services organization, was named senior vice president of services at the merged company. Bill Strecker, Digital's chief technical officer, was named vice president of technology at Compaq. And, as was widely expected, Digital CEO Robert Palmer said he would resign by the end of next month, the end of Digital's fiscal year and the merger's completion.

Compaq's proposed acquisition of Digital was approved by more than 70% of those present at a special shareholders' meeting last week. The vote brought to a formal close Digital's history, from its 1957 founding by Kenneth Olsen to Compaq's stunning $9.6 billion bid for Digital on Jan. 26.

Before the vote, the employees' parties were filled with sadness — and some resentment. "Everybody recognized it was the passing of an era," said Bob Schmitt, a former vice president of international marketing at Digital, who attended a party in Acton, Mass. "There was bitterness that Palmer was walking away with $6 million after he has just sold the company," Schmitt said.

Digital CEO Robert Palmer won't be part of Compaq's new executive team

"But I think the overall feeling was that the outlook for Digital and its customers is very good because in Compaq you have a company that knows how to use the distribution channel and sell mass products very well," said Schmitt, who is president of Biometrica Systems, Inc., a Las Vegas company that makes casino surveillance and security systems.

It is expected that Digital and Tandem Computers, Inc. — which Compaq acquired last year — will be completely subsumed by Compaq in the next few months.

In the months since the merger announcement, Digital and Compaq executives have stressed that the merger won't result in disruption of Digital technologies such as OpenVMS, Alpha chips and Digital Unix. □

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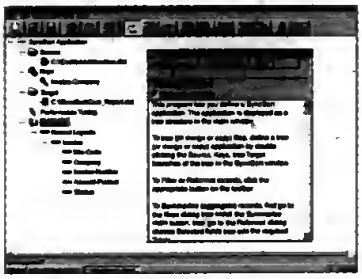

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Banks face IT culture clash in merger

By Thomas Hoffman

THE IT CULTURE CLASH facing the banking industry's latest merger — San Francisco-based Wells Fargo & Co. and Norwest Corp in Minneapolis — is a lot like trying to create a hybrid television series between *The X Files* and *Petticoat Junction*.

Wells Fargo is a hip, high-tech bank that relies heavily on electronic banking to lure young, upwardly mobile customers. Norwest is a staid, branch-heavy bank that has become very profitable by creating solid personal customer relationships, analysts said.

"One look at these two cultures and you've gotta say, 'Boy, this is gonna be interesting,'" said Bob Landry, an analyst at The Tower Group, a Newton, Mass.-based financial services and technology consultancy.

Unlike other bank megamergers announced earlier this year, such as the BankAmerica Corp./NationsBank Corp. deal (see chart), the $34 billion marriage of these two Western powerhouses has less to do with achieving cost savings than it does with playing off their respective strengths.

For example, Wells Fargo and Norwest executives said they expect to absorb $950 million in transition-related expenses to achieve $650 million in cost savings after three years. That savings would represent 17% of the noninterest expense base for Wells Fargo, the smaller of the two banks.

LESS SAVINGS

That's a lot less than the 27% expense savings expected from the BankAmerica/NationsBank deal. It is also less than the 28% cost reductions projected for the First Chicago NBD/Banc One Corp. merger, said Raphael Soifer, an analyst at Brown Brothers Harriman & Co. a New York-based investment bank.

The question everyone is asking is whether Wells Fargo can blend its high-tech, supermarket-style banking approach with Norwest's more traditional community banking strengths. "That's the key challenge. You don't want to give up the strengths of each institution and blend them into one look," said Art Gillis, president of Computer Based Solutions, Inc., a banking consultant in Dallas.

BECOMING ONE

The banks might be well served to convert their core banking systems onto Norwest's platforms, Landry said. One reason is that Wells Fargo runs a lot of heavily customized, proprietary banking systems that "hurt" the bank as it struggled to synthesize those systems with those at First Interstate Bancorp after a merger two years ago, he said.

A packaged applications approach would make it easier to consolidate the two banks under one roof by using Norwest's commercial banking systems, Landry said.

Other big banks, including The Chase Manhattan Bank Corp., Citicorp and NationsBank, recently decided to go with packaged applications such as Little Rock, Ark.-based Alltel Information Services, Inc.'s deposit systems "and customize them where necessary," Landry said.

"In the age of national banking, it doesn't make sense" to have different applications supporting different regions, he said. "To get the cost savings you need to achieve, you need to have scale" between systems, he added.

Despite Wells Fargo's reputation as an Internet banking leader, it is still recovering from its $11.3 billion 1996 hostile acquisition of First Interstate, which led to numerous computer snafus, sent droves of angry customers into the arms of smaller rivals and led to hundreds of millions of dollars in write-offs, analysts said.

That experience, along with the need to make its respective systems year 2000-ready, is the primary reason why the banks decided on a three-year transition in converting systems and picking a combined information technology and operations staff, observers said.□

Recent bank megamergers include:

June 8	Norwest & Wells Fargo	$34B
April 13	Travelers & Citicorp*	$75.1B
April 13	NationsBank & BankAmerica	$61.7B
April 6	BancOne & First Chicago	$26.9B

*Merger of bank and insurance firm

Banks can offer you many hard lessons on bringing together IT staff. Managing, page 69.

A wedding, West Coast style

The Wells Fargo merger with Norwest will have a distinct West Coast lean. The bank will retain the Wells Fargo name and its San Francisco headquarters. Wells Fargo President Rod Jacobs will head up the team consolidating the banks' systems and operations.

Beyond its Bay Area look, however, lies Norwest, a regional banking powerhouse and the nation's largest originator of mortgages.

Norwest's community banking approach has helped it develop strong customer relationships and has generated one of the industry's highest cross-sell ratios (number of banking products sold to each customer) in the industry at 4-to-1. By comparison, Wells Fargo's cross-sell ratio is a mere 2.4-to-1, notes Ronald I. Mandle, an analyst at Sanford C. Bernstein & Co. in New York.

— Thomas Hoffman

Hyundai builds extranet to streamline parts ordering

By Bob Wallace

IT'S A DO-IT-YOURSELF mechanic's dream.

And it may be a dream come true for dealers, independent repair shops and international distributors of Hyundai cars. They will be able to order parts and track orders over the Internet using an extranet to be built next month.

Hyundai Motors of America hopes the extranet will eliminate the deluge of phoned-in parts orders from dealers, as well as the faxed orders from international distributors. Routine calls to check on the status of orders should cease, too.

"Our goal is to streamline the parts ordering and tracking process while making it more efficient for everyone," said Bernie Reyes, a technical analyst at Hyundai's U.S. unit in Fountain Valley, Calif. "And we want to put consumers more in charge as well."

Reyes said he expects an initial 25% reduction in calls for parts orders and status inquiries.

With the new World Wide Web site to be completed this fall, customers can enter their vehicle identification number and locate the parts they need using online catalogs.

Credit-card purchases can be made using an electronic-commerce system from Chicago-based Click Interactive, Inc., which enters orders into Hyundai's IBM 3090 mainframe.

Today, most Hyundai dealers look up parts in sometimes-outdated paper catalogs and microfiche systems and then place orders over third-party satellite networks. Dealers are tiring of that process, in part because it doesn't let them check order status. The extranet will.

"We surveyed our dealers and over 70% said they would prefer our Internet-based parts system," Reyes said.

"It could eliminate all the baloney we go through with [paper] catalogs and microfiche," said Ed Newman, president of Newman Ford-Hyundai in Salem, N.H. "This would also be good for the consumer, because they could get the information they need fast, rather than calling all over looking for parts. I'm definitely for it."

Hyundai's parts-ordering extranet is the first in the auto industry to be open to consumers, which gives Hyundai a competitive edge, said Bob Schnorbus, an analyst at J. D. Power and Associates in Troy, Mich.

"Larger car manufacturers want to bring as many consumers back into dealerships for repairs as possible. But for smaller automakers like Hyundai, with far fewer dealerships, direct ordering capabilities become an important convenience," Schnorbus said.

Hyundai has about 500 U.S. dealerships, compared with about 8,000 for General Motors Corp.

Jim Mateyka said opening up the parts process globally represents another industry first.

Hyundai's extranet will let consumers, dealers, repair shops and distributors get parts easier for cars such as this Tiburon

"This should help Hyundai reduce parts inventories, which means savings, because it's expensive to have excess parts laying around all over the world," said Mateyka, an automotive industry consultant at A. T. Kearney, Inc. in Chicago.

In the future, Hyundai plans to extend the ability to check order status to its mobile field representatives.□

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VM/VSE shops get migration reprieve

▸ *IBM pitches OS/390 "co-existence" strategy*

By Jaikumar Vijayan

IBM IS TONING down its efforts of the past two years to persuade customers of its VM and VSE mainframe operating environments to migrate wholesale to the newer OS/390 operating system.

Instead, IBM said it has begun to peddle an operating system "co-existence" strategy aimed at making it less expensive for users to try out OS/390 while continuing to run their VM and VSE applications. During the past few months, IBM has told VM and VSE shops they can continue to run their legacy applications while migrating some new ones to OS/390.

The moves are a cautionary effort by IBM to stave off possible migrations to other platforms by users looking for new functionality but unwilling to make the investment in OS/390, according to analysts.

OS/390 bundles the MVS operating system with mainframe applications and functions formerly sold separately. It also supports Unix and enterprise resource planning applications. VM and VSE shops can run OS/390 as a "guest" operating system to access some of the new functionality. An upcoming version will add more VM and VSE hooks to make OS/390 migration easier, but IBM hasn't set a release date.

Also driving IBM's moves are year 2000 issues that are forcing many VM/VSE shops — some running applications dating back 20 years or more — to choose between application remediation and migration to new platforms such as Unix and Windows NT, said Mike Kahn, an analyst at The Clipper Group in Wellesley, Mass.

LOWER COSTS

Before the new pricing options were available, the cost of migrating VM/VSE applications to OS/390 was significantly higher compared with moving them to Unix or NT, said Christine Schweikhard, a lead systems programmer at West Valley Nuclear Services Co., a CBS, Inc. subsidiary in Buffalo, N.Y.

"We figured it would be superexpensive for us to move to OS/390," Schweikhard said. But a recent pricing scheme from IBM let the company get the latest year-2000 compliant versions of VM and VSE bundled with the price of a single version of OS/390.

Share's John Bevis agrees that IBM has focused on OS/390

The deal lets the company do remediation work on existing applications while hosting new ones on OS/390, she said.

IBM will offer the discretionary pricing schemes to more users, said Randy Stellman, an OS/390 consultant at IBM. Users will have to demonstrate that they are running at least one application on OS/390 in the next three years, he said.

IBM is also developing a special version of OS/390 that will integrate better with VM and VSE, Stellman said. The software will allow VM and VSE users to more easily tap some of OS/390's capabilities — such as its support for Lotus Development Corp.'s Notes — from their existing environments.

VM and VSE sites, estimated by IBM to number around 20,000, have asked for some of the same functionality from IBM, but the company has made no secret that it considers OS/390 more strategic.

"They have certainly chosen to devote more resources into the development of OS/390 than into VM or VSE," said John Bevis, president of the Share mainframe user group and a manager at the University of Florida's Northeast Regional Data Center in Gainesville. □

Knowledge base may speed Unicenter implementation

By Patrick Dryden

COMPUTER ASSOCIATES International, Inc. is preparing interactive software that promises to cut in half the time and expense of implementing CA's Unicenter management suite.

The usual approach to rolling out Unicenter is to hold a bunch of long meetings and dig through cookbook-style manuals to make the tools match the company's needs.

The upcoming software, co-developed by CA and Cobre Group, Inc., uses a knowledge base and methodology to streamline the process of configuring and implementing Unicenter.

CA's Chris Wagner says the new software cuts installation time in half

Analysts said CA, like its rivals, is trying to address the shortage of support after the sale.

"End-to-end management is a huge software engineering project. After spending millions of dollars on tools, you must spend two or three times that before you can hit thousands of moving targets," said Chip Gliedman, an analyst at Giga Information Group in Cambridge, Mass. "Anything that simplifies the rollout process will help IS show payback sooner to keep managers on their side."

The success rate is dismal for Unicenter and frameworks from rivals such as Hewlett-Packard Co. and Tivoli Systems, Inc., according to Ray Paquet, an analyst at Gartner Group, Inc. in Stamford, Conn.

"Many big integrated management projects fail or get scaled back because the software is extremely difficult to implement," Paquet said. An automated process could help if it works as promised, he said.

The software, in beta testing now, should be available by August; pricing hasn't been set. CA hasn't named its version, but Cobre Group will offer the tools under the name HelpMate.

The software sounds like "a major step forward to reduce the time and streamline the entire project," said Allan Horn, vice president of data center operations at USA Group, Inc. in Indianapolis.

A year ago, the insurer began its Unicenter project the usual way: "Get everyone in the room, and try to figure out what we need to do from implementation cookbooks," Horn said. "It's amazing how much time you can waste that way."

Users beta-testing the software have reduced their total software installation time from four months to two and have slashed the cost for consulting and implementation services from as much as $10 to $4 for every software dollar, according to Chris Wagner, executive vice president of global professional services at CA in Islandia, N.Y.

Java software reduces complex design processes to an interactive dialogue and can actually launch Unicenter setup functions, said Jud Breslin, president of Cobre Group in Morristown, N.J.

"IS and integrators can build a map of business processes managed through Unicenter and test staff knowledge before going live," he said.

That approach sounds better than the current quick-start guide, which planners use to lay out goals, tasks and a project time line, said Unicenter user Jeff Berwick, chief information officer at Roney & Co. in Detroit.

"Perhaps we could have learned more about Unicenter's needs ahead of time with this program," he said. □

Q&A on HP's management software division strategy. Page 49

OMB blasts government date conversions

By Matt Hamblen

WORK ON year 2000 fixes slowed at the Department of Defense in the past quarter, and only minimal progress was made at the agency that oversees the Federal Aviation Administration, according to a government report released last week.

The report, from the Office of Management and Budget (OMB), lists six out of 24 federal agencies as showing "insufficient evidence of progress" on year 2000 work. The six were the departments of Defense, Transportation, Energy, Education, Health and Human Services and the U.S. Agency for International Development. To press the lagging agencies, John Koskinen, chairman of the President's Year 2000 Conversion Council, said he is requiring those six and nine others to file monthly, rather than quarterly, progress reports.

Last week's report shows it will cost the government $5 billion to get federal agencies ready for year 2000, up from the $4.7 billion reported in the February quarterly report.

OMB acting deputy director G. Edward Deseve said many agencies "are making good progress, but others continue to face significant challenges."

The OMB said agencies showing good progress include the Social Security Administration, Federal Emergency Management Administration and National Science Foundation.

"The FAA has become the poster child for year 2000," Koskinen told bankers in New York June 2. But he said the public shouldn't be worried about traveling on Jan. 1, 2000, because the FAA has a year 2000-compliant backup system if other systems can't be made ready. If it is used, the backup system will slow departures and arrivals to the pace of bad weather, allowing 70% of the normal number of flights.

Critics of the government's efforts reacted impatiently. The government deserves an F grade for its response to the date conversion problem, said Rep. Stephen Horn (R-Calif.). □

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Data tool cuts to the chase: Profits

▸ Software helps users evaluate where business lags or excels

By Craig Stedman
PALM BEACH, FLA.

FOR SOME COMPANIES, using packaged software to manage order entry and other tasks isn't enough. They also want to analyze the data that flows into their business systems to find out what makes money and what doesn't.

That usually has meant waiting for the technology side of the house to write queries for users. But some application vendors are now readying built-in data analysis features that let business managers measure the profitability of orders, products and customers.

For example, Swedish vendor Industri-Matematik International Corp. (IMI) is beta-testing a profitability analysis module for its System ESS order management software.

And PeopleSoft, Inc. plans to test similar functionality as part of an upgrade of its packaged applications due out this month.

MoDo Merchants Ltd., a U.K.-based distributor of printing and writing paper, is the first user to prototype IMI's Economic Value Analyzer software. Hugh Sturges, finance and personnel director at the company, said the software already has helped him persuade a paper supplier to hold more inventory for MoDo Merchants.

"This gives us another angle instead of banging on people's doors and just trying to lower their prices," Sturges said at IMI's North American user group conference here last week. "Rather than just talking about one number, we can talk about six."

MODO WORKING

MoDo Merchants plans these uses for IMI's profitability analysis software:

- Identifying products or segments that aren't profitable
- Balancing profits against the capital tied up in products
- Measuring the cost of logistics or extended payment terms

Executives can now look through order data for the 120,000 tons of paper MoDo ships each year to find products that aren't pulling their weight. Although MoDo Merchants also tested stand-alone query tools, "it would take a long time and a skilled individual to get out the same information," Sturges said.

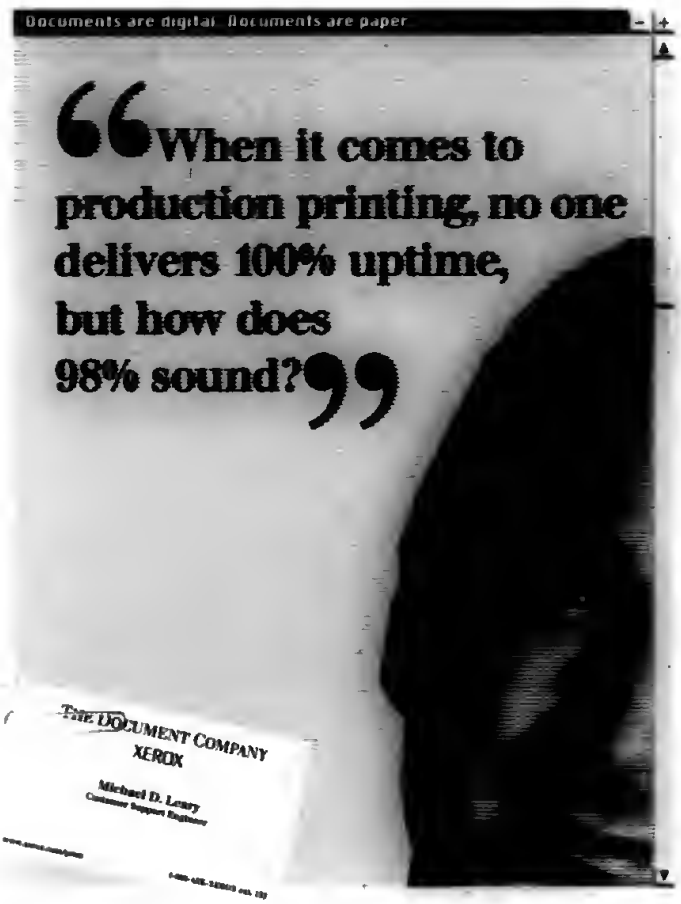
FORECASTING TOOL

Gary Nelson, a senior information technology and business analyst at Cargill, Inc.'s Honeysuckle White division, said what-if analysis capabilities built in to the profitability module could be used by marketing managers to test different pricing options before a promotion is launched.

"We don't want to invest in a project and then find out it doesn't work for us," Nelson said. The Honeysuckle White division, a turkey processor in Springdale, Ark., plans to go live with IMI's order management application early next year.

IMI, which has U.S. offices in Tarrytown, N.Y., said the profitability module should ship this fall; pricing hasn't been set. Pleasanton, Calif.-based PeopleSoft said its performance measurement software should be ready for general release early next year.

Such products should give business managers more up-to-the-minute analysis capabilities than full-fledged data warehouses, said Ann Grackin, an analyst at Benchmarking Partners, Inc. in Cambridge, Mass. But many users are still just trying to get up to speed on the packaged applications, she said. □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FRANKLY SPEAKING

Tales from IS

FRANK HAYES

THE MOST HATED MAN in the World looked up as Murchnick knocked on the open office door.

"Got a minute? We need this — it's perfect for my guys in the field," Murchnick said, slapping a handful of newspaper clippings onto the desk.

"Hmm." The Most Hated Man peered over his bifocals at the torn newsprint. "MySpace, from the Pixel Company. What is it?"

"It's a new technology that lets us get around Windows," Murchnick said excitedly. "It sits at the bottom of the screen in that black space outside the Windows desktop. . . ."

"The overscan area," The Most Hated Man said.

"Yeah, whatever," Murchnick said. "It's a tool bar — you just click on whatever you want. But it's completely outside Windows. So you can get news feeds, launch Java and even run another operating system right alongside Windows."

Murchnick poked triumphantly at the clippings. "This is great stuff. There's an analyst here who claims that this does things Sun, Oracle and Netscape all said couldn't be done. And according to another guy, nothing else comes close. We gotta have this."

"They got it wrong. That trade weekly, The Associated Press and Reuters, too."

The Most Hated Man sat back in his chair. "No," he said.

"Whaddya mean, no?" Murchnick's voice rose. "You haven't even looked at this thing, and you're telling me I can't give it to my sales guys? You don't have a single reason. . . ."

"No." The Most Hated Man said. "I've got three reasons you can't use it. First, it doesn't do any of those things you say it does."

Murchnick grabbed the clippings and sputtered, "But it says here. . . ."

"They got it wrong." The Most Hated Man's gaze was cold and level. "That trade weekly, The Associated Press and Reuters, too."

"No, no, no," Murchnick said. "You have it wrong. I read the stories. I called the vendor, too. You know what MySpace is? It's a nice little menu bar. It runs under Windows, and it's pretty much like any other Windows menu bar. Except it needs a special video driver to sit there at the bottom of the screen below the Windows desktop."

"But it can't switch between operating systems," The Most Hated Man said. "It can't — what does this story say? — 'push Windows out of the way' for Java. It doesn't work any magic on the Internet. It just doesn't do those things. You can't believe everything you read in the papers, Murch.

"The second reason you can't use it is there's nothing you need it for. Your sales guys can already run Java in their Web browsers. They get news from the Internet. Or if they need a special news feed, we can set that up.

"But right now all the help desk hears is those guys moaning about all the programs they have to use and how complicated they are. I don't think they need another one if it isn't going to make their lives easier."

Now Murchnick was turning purple.

"And the third reason you can't use it is that your salespeople are all on laptops." The Most Hated Man continued. "There isn't any space at the bottom of the screen to put that cute, little menu. Even if it did everything those stories claim. And even if you had some use for it. Which is why the answer is no and no and no."

Murchnick's jaw moved up and down but no sound came out. Without a word, he turned and stormed out of the office.

And the IS manager went back to his work as The Most Hated Man in the World. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes @cw.com.

SHORTS

AOL settles with gay sailor

A sailor threatened with expulsion from the U.S. Navy because of personal information obtained from America Online, Inc. will be allowed to retire with a full pension and benefits, his attorney said last week. The Navy had asked America Online for the identity of a sailor who had posted — in a personal profile using a pseudonym — that he was gay. America Online, in Reston, Va., apologized to the sailor, Master Chief Petty Officer Timothy R. McVeigh, and agreed to pay damages. Both sides agreed not to reveal figures.

Pianist brings ergonomics suit

A concert pianist is suing Houston-based Compaq Computer Corp. for $10.2 billion, claiming the PC maker took material from her book on ergonomics and distributed it without permission. Ergonome, Inc., cofounded by Stephanie Brown, is seeking damages for copyright infringement and fraud related to Compaq's alleged printing of portions of Ergonome's material. Ergonome published a book based on Brown's patented ergonomic keyboard technique. The suit charges that in 1994 Compaq requested a licensing agreement to include the book with every Compaq computer sold, but the deal was never finalized.

Social Security gets secure

The Social Security Administration in Baltimore last week received a waiver to use commercial-grade encryption from RSA Data Security, Inc. in Redwood City, Calif., for its Internet site. That signals a new government willingness to relax its stringent encryption policy. Federal agencies generally are required to use the federal Data Encryption Standard, but popular World Wide Web browsers use RSA's encryption algorithms.

MCI sued to honor agreement

Cable and Wireless PLC last week filed suit in U.S. District Court in Washington to require MCI Communications Corp. to honor its agreement to sell its Internet backbone business to the British company. Cable and Wireless hopes to prevent MCI from reneging on its deal. The suit says MCI is trying to sell its Internet backbone and valuable multinational corporate Internet accounts and residential customers to third parties.

Layoff tied to 2000 bug

Diebold, Inc., a manufacturer of automated teller machines (ATM), last week announced plans to cut 500 to 600 jobs to keep costs in line with lowered revenue expectations. The move comes as Diebold's banking-industry customers are focusing more on mergers and the year 2000 problem and drawing staff and investments away from ATM installations, according to the North Canton, Ohio-based company.

Cut cable downs UUnet service

A cut fiber-optic cable in White Plains, N.Y., shut down portions of the Internet last Thursday and slowed other parts of it to a crawl. The outage affected Internet service providers across the U.S. Customers in New York, Boston and New Jersey were hit particularly hard. The damage occurred at 11:15 a.m EDT, and service was fully restored at 3 p.m. The cable belonged to UUnet Technologies, Inc.

Visual Basic 6.0 previewed

Microsoft Corp. last week previewed enhancements in Version 6.0 of its Visual Basic application development tool. Visual Basic 6.0 supports OLE DB, ActiveX Data Objects and Open Database Connectivity middleware technology. It was designed to enable Windows 95 or NT clients to access information from a range of databases. The software is due to ship in September.

CONTRACT OF THE WEEK

Customer: Winn-Dixie Stores, Inc., Jacksonville, Fla.

Prime contractor: Wang Laboratories, Inc., Billerica, Mass.

Terms: $18 million, three years

Highlights: On-site technical support for 1,165 Winn-Dixie supermarkets in 14 Southeastern U.S. states. Wang will deploy field engineers to support in-store hardware, such as point-of-sale systems, and provide project managers to implement Winn-Dixie's long-term technology strategy.

SHORT TAKES **Microsoft may have left off the utility that lets Windows 98 users easily uninstall the software, but a fix is on the way in the final version set to hit the streets June 25. Meanwhile, a beta version of Internet Explorer 4.0 for the Hewlett-Packard Co. Unix platform can now be downloaded from *www.microsoft.com/ie/unix*. . . . Internet bookseller Amazon.com, Inc. last week launched its music store, which features 225,000 sample audio clips and 30% discounts on best-selling CDs. . . . Manugistics Group, Inc. last week made good on its prediction, reporting an $8.2 million loss for its quarter ended May 31, compared with a $2 million profit for the same period a year ago. . . . Sterling Commerce, Inc. last week received government approval to export 128-bit encryption to financial institutions and U.S. subsidiaries worldwide.**

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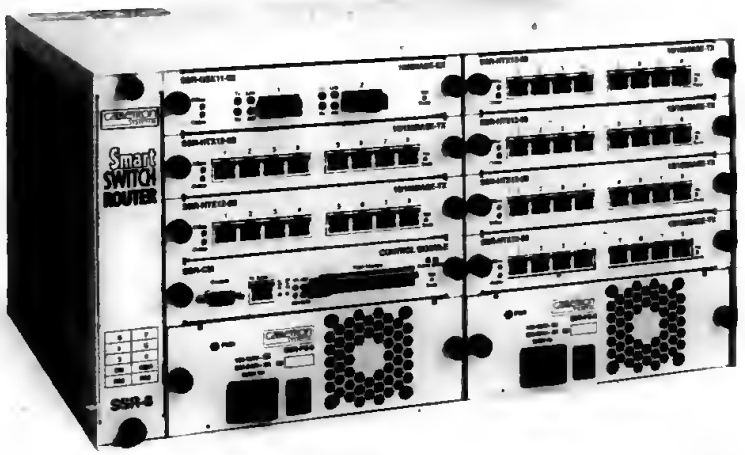

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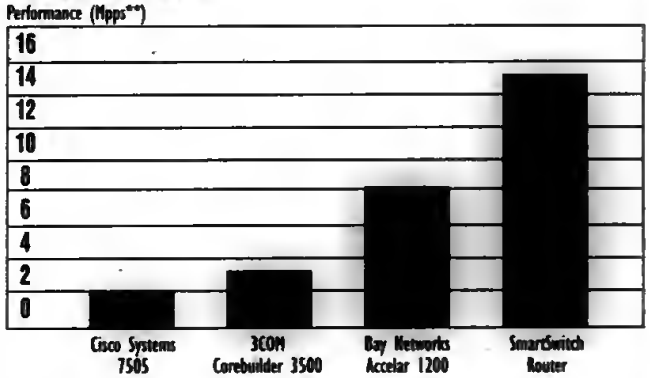

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CABLETRON SYSTEMS

Nasdaq speeds data delivery

▸ *Multicast distribution system faster than point-to-point messages*

By Thomas Hoffman

THE NASDAQ STOCK MARKET, INC. is about to begin rolling out a new multimillion-dollar information distribution system that is expected to deliver stock and trading information faster and more cost-effectively to member companies and other partners.

Under the multiyear project, Washington-based Nasdaq will install a suite of middleware software from Palo Alto, Calif.-based Tibco Finance Technology, Inc. that will enable it to broadcast a single message, such as Intel Corp.'s latest stock price, to thousands of users at once.

The approach is expected to be considerably faster and more cost-effective than sending out individual messages using point-to-point connections — the standard by which Nasdaq and other exchanges have been sending messages. Analysts said they believe Nasdaq is the first to use a multicast approach.

TIME-SAVER

Larry Poleshuck, a senior vice president at Nasdaq's Trumbull, Conn., data center, couldn't quantify how much faster the new system would deliver messages. But he said it should reduce the time it takes to deliver and post new products to members from one year to just a few months.

Nasdaq currently distributes information to stock traders and other partners through a variety of networks using different protocols, such as SNA, TCP/IP and X.25. By comparison, Tibco's bus architecture "eliminates the need for these point-to-point connections" while providing a common mechanism for distributing data faster and cheaper, Poleshuck said.

BIG COST SAVINGS

Broadcast or multicast capabilities "can save significant dollars" because those networks can transmit data to multiple recipients through a single message, said Liza Henderson, director at Telechoice, Inc., a network consultancy in Boston.

But sources close to the electronic stock market said some of the biggest cost savings from the multicast network could come from Nasdaq's plans to use it to consolidate data processing between the American Stock Exchange and the Philadelphia Stock Exchange into its Trumbull data center. Analysts said that alone could save millions of dollars in transaction processing costs.

Last week, Nasdaq reached an agreement in principle to acquire the Philadelphia exchange. Amex floor brokers and seat owners are slated to vote on Nasdaq's plans to acquire the options market on June 25. Two-thirds of Amex'a 864 brokers and seat owners must approve the deal, a Nasdaq spokesman said.

Poleshuck said Nasdaq plans to focus first on its internal data distribution requirements, such as the market systems that feed its World Wide Web sites, including distributing stock quotes and trading data to its Nasdaq.com site. □

The multicast approach will allow the Nasdaq Stock Market to broadcast a single message to thousands of users, and in turn, reduce costs

CARRY A BIG STICK

Aggressive negotiations for telecommunications contracts may help lower voice costs. To lower voice communications contract costs, users should:

- Use a formal request for proposals bidding process
- Invite multiple vendors to bid
- Return to the bargaining table three or four times for a single contract

Approach integrated networks with caution

By Matt Hamblen

IN THE NEW AGE of integrated wide-area networks, such as Sprint Corp.'a Integrated On-Demand Network (ION), corporate users will need to become shrewd contract negotiators to avoid overpaying carriers, a prominent analyst warned last week.

For one thing, users of integrated networks shouldn't get locked in to multiyear contracts with minimum cash payments, according to Ken McGee, an analyst at Gartner Group, Inc. in Stamford, Conn. For years, businesses have agreed to minimum payments in return for discounted voice and data rates.

CONTRACT NEGOTIATIONS

But the integrated networks can produce such big savings — one user said 50% — that users might end up paying more than they should if they agree to contracts with minimum annual payments.

"There are hundreds of thousands of customers out there ready to sign new contracts. . . . And the real concern is they will sign multimillion-dollar contracts and still be held to a minimum dollar of spending per year," McGee said.

For example, users could either pocket the big savings from integrated networks or use the money to pay for more bandwidth or guaranteed service levels. Or they could cut deals with other carriers.

INCREASED INTEREST

McGee said he issued the advisory because Sprint's ION announcement [CW, June 8] generated more interest and confusion from Gartner Group clients than any networking announcement in nine years.

ION, which is being beta-tested by several large companies, will bring Sprint'a Asynchronous Transfer Mode (ATM) network into each company's premises. An on-site concentrator device uses proprietary software to connect corporate voice, data and video networks into that ATM network.

AT&T Corp. and MCI Communications Corp. last week announced efforts to launch ION-like networks, although the MCI version is based on MCI'a Internet Protocol network instead of ATM.

McGee said he has advised customers to consider how the new integrated WAN will affect a company's LAN. "Should the LAN be ATM or Gigabit Ethernet, for instance?" McGee said. Gartner Group hopes to have some recommendations by fall.

Also, some users may need to reconfigure their private branch exchange (PBX) telephone switches to handle ION and other integrated networks, McGee said.

ION beta tester Hallmark Cards, Inc. in Kansas City, Mo., is rushing to install a $1 million digital PBX to help accommodate ION, said James Miller, chief information officer at Hallmark.

But he said the decision to move from an analog PBX to a digital PBX was made before ION came along.

A Sprint spokesman said users don't need major equipment upgrades to handle ION.

Miller said he expects to cut his WAN costs in half with ION. But he also said he expects Sprint to push more services and bandwidth at Hallmark to keep the firm'a spending the same as before.

For carriers, the problem is that integrated networks could sharply reduce revenue. But analysts said carriers will surely find ways to keep revenue up by selling extra services, such as network management and service-level guarantees. □

Equifax, IBM team up on Internet security

By Sharon Machlis

EQUIFAX, INC. IN ATLANTA, a major transaction processing and credit reporting company, is moving into the Internet security arena, partnering with IBM to offer digital certificate services for electronic commerce.

"It'a an essential component of business-to-business electronic commerce," said Chris Gwynn, an analyst at The Yankee Group in Boston. "There'a definitely a lot of market demand for something like this."

But Gwynn said widespread adoption of the technology is still a couple of years away.

Equifax and IBM are eyeing businesses that want to ensure the identity of their customers online, both other business users and consumers.

Such services could be used by, say, a bank to ensure the identity of online customers, as well as manufacturers seeking to conduct secure transactions with suppliers.

Equifax, using IBM Vault Registry digital certificate software, would issue and manage certificates that prove the identity of users over a network.

"That'a the kind of thing we would always be looking at," said Wayne Hilty, chief financial officer at Copart, Inc. in Benicia, Calif., which just launched an online auction service in addition to its traditional nationwide vehicle auctions.

Other companies, such as VeriSign, Inc. in Mountain View, Calif.; GTE CyberTrust Solutions, Inc. in Needham Heights, Mass.; and Entrust Technologies Ltd. in Richardson, Texas, offer such certificate services. But with IBM'a and Equifax'a broad customer base, Gwynn said, "this alliance has a pretty good chance of overtaking them all."

The new services are slated to become available in the third quarter. Pricing hasn't been set. □

Netscape makes major push into the electronic-commerce space. Page 45

KNOW-HOW What's it going to take to get the bandwidth you need (where & when & as fast as you need it)? To handle wireless communications as easily as wired? To get data as reliable as voice? (?????) It's going to take people. Technology. Experience. And the ability to deliver. We've built, and continue to build, the most powerful networks on earth. We've got the largest service force in the industry (already we service more networks than anyone on the planet). And we've got the brains of Bell Labs behind us. This is the kind of combined arsenal it's going to take to make sure the network you start building now is strong enough to be your network down the road. **We make the things that make communications work.™**

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Look out, Goliath, David has a rock

Underdog package deliverer DHL turns to 'net

[illegible] comes to the U.S. savvy package delivery business, DHL Worldwide Express bears a David-like resemblance that that against muscular rivals Federal Express and United Parcel Service of America Inc.

DHL with its $252 million budget gets outspent four to one in information technology dollars by the U.S. market leaders. But it's emphasizing its international delivery, customizing business-oriented policies for new applications and relying on transmissions to PCs decision to stress networks built on TCP/IP — the protocol for communicating over the Internet — DHL officials say they hope to make a dent in the giants' standing.

The nice thing is Internet technology and the change it enables — an inexpensive communications on an open standards-based network — is like David's rock," said Alan Boehme, director of business planning at DHL. "I'm not going to say that DHL is going to kill the giant, but Internet technology is the great equalizer for any business.

"I'm not going to say that DHL is going to kill the giant, but Internet technology is the great equalizer for any business."
– Alan Boehme, DHL

LAGGING BEHIND

Given its size, spending, DHL sometimes lags behind. Both FedEx and UPS, for instance, launched Internet tracking and ordering systems for U.S. customers earlier than DHL.

Such technology lags aren't necessarily a killer blow to DHL, whose non-U.S. customers have been slower to use the Internet. But the company based in Redwood City, Calif., and Brussels can't ignore competitive advantages that technology can bring, observers warned.

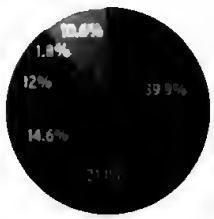
The companies that have a great information technology are going to dominate this industry in the next century. Do that stuff. It's not about planes and packages — access to some can do that," said Hardin, a professor of [illegible] at California State [illegible] Long Beach, who follows the package delivery market.

DHL officials said they made a good deal that does. The company began putting in place its TCP/IP Unix-based network more than 10 years ago, laying a foundation that later would position it to take advantage of Internet technology.

The TCP/IP decision made sense, company officials said. DHL started in 1969, shuttling shipping records by air between San Francisco and Honolulu so that cargo vessels wouldn't sit idle in ports. Within a few years, the company expanded its door-to-door express service to the Philippines, Japan, Hong Kong, Singapore and Australia. Europe, Latin America, the Middle East and Africa followed in the mid-'70s.

Information needed to be ex-

DHL owns only 4.5% of the $21.7M U.S. package carrier market but is a leader overseas



- DHL
- Federal Express
- UPS
- TNT/GD Express
- Airborne Express
- Others

Total shipments: $1.2M

Base: International express traffic, daily shipment volume from mid-1996 to mid-1997

[illegible] Management Group, Inc. 1997 report

changed among DHL offices around the world. A TCP/IP-based network helped connect them.

Now DHL is trying to better use that existing infrastructure. Nearly a year ago, the company hired a new U.S. chief information officer, former Apple Computer Inc. CIO Joseph Riera, to do it. Riera "gives us someone who participates and understands the business and suggests ways that technology can address customer needs," said Vic Guinasso, president and chief operating officer at DHL.

DHL officials said the company standardized the way it develops and supports business applications using an object-oriented approach, building business rules up front and reusing code — rather than letting different parts of the company run "stovepiped" systems.

The point is: Build it once, use it everywhere — not build it three or four or 10 times around the world or even in the U.S., Riera said.

DHL has also done the following:

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Another advantage of the system is on the back end. DHL's network architecture lets in-house developers design the application so that all information is directly linked to its back-end database systems. If a customer orders a pickup, the information is integrated with the customer support system.

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Several other vendors, including Netscape Communications Corp., have also rushed out Web-based software that is supposed to free users from relying on stacks of paper and faxes to buy business supplies and capital equipment.

Buyers can get "huge cost savings" by using the software to cut down on their suppliers and to drive harder bargains with the survivors, said Erina Dubois, an analyst at Dataquest in San Jose, Calif. But, she added, demand is just emerging. Dataquest counted only $12 million in sales last year.

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Look out, Goliath, David has a rock

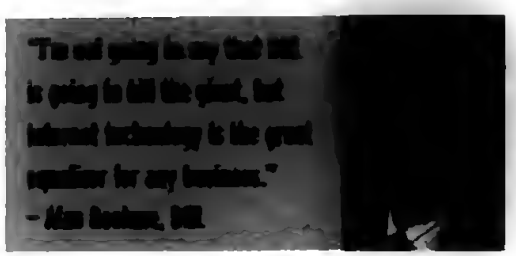
▸ *Underdog package deliverer DHL turns to 'net*

By Carol Sliwa

WHEN IT COMES to the IT-savvy package delivery business, DHL Worldwide Express brings a David-like slingshot to the fray against muscular rivals Federal Express and United Parcel Service of America, Inc.

DHL, with its $250 million budget, gets outspent over 4-to-1 in information technology dollars by the U.S. market leaders. But by emphasizing its international deliveries, instituting business-oriented policies for new applications and relying on a fortuitous 1980s decision to stress networks built on TCP/IP — the protocol for communicating over the Internet — DHL officials said they hope to make a dent in the giants' standing.

"The nice thing is Internet technology and the change it enables — inexpensive communication on an open, standards-based network — is like David's rock," said Alan Boehme, director of business planning at DHL. "I'm not going to say that DHL is going to kill the giant, but Internet technology is the great equalizer for any business."


"The rock going to my David will
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LAGGING BEHIND

Given its rivals' spending, DHL sometimes falls behind. Both FedEx and UPS, for instance, launched Internet tracking and ordering systems for U.S. customers earlier than DHL.

Such technology lags aren't necessarily a killer blow to DHL, whose non-U.S. customers have been slower to use the Internet. But the company, based in Redwood City, Calif., and Brussels, can't ignore competitive advantages that technology can bring, observers warned.

"The companies that have superior information technology are going to dominate this industry in the next century. It's that simple. It's not about airplanes and packages, because anyone can do that," said Forrest Harding, a professor of marketing at California State University in Long Beach, who follows the package delivery market.

DHL officials said they made at least one smart move: The company began putting in place its TCP/IP, Unix-based network more than 10 years ago, laying a foundation that later would position it to take advantage of Internet technology.

The TCP/IP decision made sense, company officials said. DHL started in 1969, shuttling shipping records by air between San Francisco and Honolulu so that cargo vessels wouldn't sit idle in ports. Within a few years, the company expanded its door-to-door express service to the Philippines, Japan, Hong Kong, Singapore and Australia. Europe, Latin America, the Middle East and Africa followed in the mid-'70s.

Information needed to be exchanged among DHL offices around the world. A TCP/IP-based network helped connect them.

DHL owns only 4.5% of the $21.7M U.S. package carrier market but is a leader overseas

Total shipments: $1.2M

Base: International express traffic daily shipment volume from mid-1996 to mid-1997

Source: Air Cargo Management Group, Nov. 1997 report

Now DHL is trying to better use that existing infrastructure. Nearly a year ago, the company hired a new U.S. chief information officer, former Apple Computer, Inc. CIO Joseph Riera, to do it. Riera "gives us someone who participates and understands the business and suggests ways that technology can address customer needs," said Vic Guinasso, president and chief operating officer at DHL.

DHL officials said the company standardized the way it develops and supports business applications, using an object-oriented approach, building business rules up front and reusing code — rather than letting different parts of the company run "stovepiped" systems. "The point is: Build it once, use it everywhere — not build it three or four or 10 times around the world, or even in the U.S.," Riera said.

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FedEx to give online procurement a try

By Craig Stedman

INTERNET-BASED procurement software is used by only a hardy few at this point. But now you can add Federal Express to the list.

The Memphis-based delivery company this week is expected to announce plans to install an online purchasing system that will connect 6,500 employees to suppliers via the World Wide Web.

The system, based on software from Ariba Technologies, Inc. in Sunnyvale, Calif., is due to be deployed next month and will be rolled out across FedEx in four stages.

FedEx's move follows an announcement last week by Ariba rival CommerceOne, Inc., which is posting product catalogs from more than 5,000 distributors and manufacturers on a central Web site. CommerceOne, in Walnut Creek, Calif., said that will free users of its BuySite procurement software from having to set up direct links to individual suppliers.

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Online auction services are thriving

CONTINUED FROM PAGE 1

said, although he didn't say by how much.

Such is the allure of business-to-business Web auctions, both for expansion-minded sellers and bargain-minded buyers. "The business side is taking off far greater than we expected," said Steven Bell, an analyst at Forrester Research, Inc. in Cambridge, Mass. Forrester predicts that such auctions will handle $8.7 billion this year, up from $2.5 billion last year.

Real-world auctioneers are among those going online. Copart, Inc., which sells salvaged vehicles for the insurance industry, launched Internet bidding earlier this month.

Internet bids let customers view inventory at many more locations

Norman Levy Associates in Southfield, Mich., delayed its first Internet auction of industrial equipment from June 8 to June 17 because a flood of goods was submitted right before deadline, which made it tough to get everything posted online in time, said spokeswoman Vicki Lamers.

FairMarket, Inc. in Woburn, Mass., will launch a self-listing service this week on its business-to-business auction site (*www.fairmarket.com*), so that companies can post their own goods.

"It's a great way to shift to just-in-time sales of excess inventory," Scott Smith, an analyst at Current Analysis, Inc. in Sterling, Va., said of online auctions.

TWOFOLD ALLURE

For buyers, there are two appealing aspects: convenience and savings.

Web auction-goers can find everything online from notebook computers to wrecked cars to excess telecommunications capacity (via London-based Band-X at *www.band-x.com*). Automated Credit Exchange (*www.ace-mkt.com*) even plans to sell some government pollution rights.

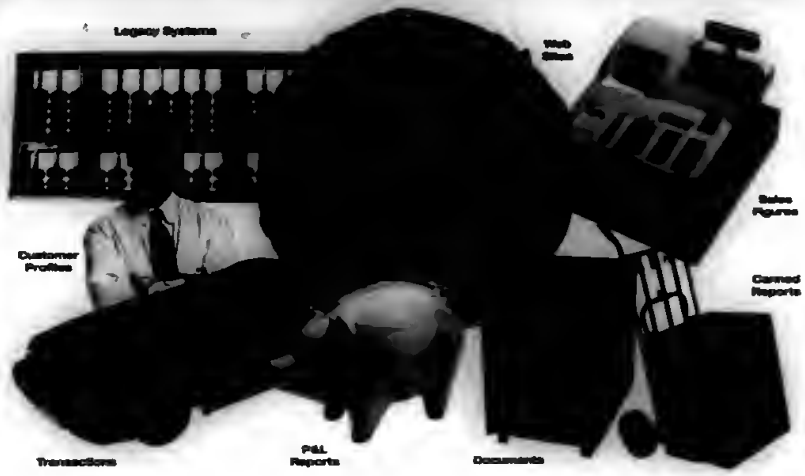
At Copart, allowing Internet bids means buyers looking for salvaged cars can consider inventory in dozens of locations per week, not just the one they can visit on a particular day, said President A. Jayson Adair. That lets buyers use their time more efficiently and lets the insurance companies selling the vehicles reach more potential customers.

"If you know what you're buying, you can get some great deals," said Joseph Cracchiolo, vice president of engineering at RightFax, Inc., a software firm in Tucson, Ariz. He recently picked up five IBM Pentium Pro workstations for $1,029 each — they usually cost at least $2,700 new — at the Onsale auction site (*www.onsale.com*).

But David Zingsheim, chief financial officer at Steelcraft Corp. in Hartford, Wis., cautioned that buyers have to be disciplined. "People get hung up in the heat of an auction," he said. "It's almost like being in Las Vegas." He said he has seen bidders end up paying new-equipment prices for refurbished goods. But he added that he recently paid less than $300 each for a dozen printers that were each worth at least $550.

Web-based bidding systems don't come cheap. For example, Copart officials estimate that because of an imaging system that was overhauled so bidders could view inventory, customized auction software and the hardware infrastructure to support the system, its investment will hit $1.5 million.

Still, officials at the Benecia, Calif., company said increased business and happier customers are worth the money. □



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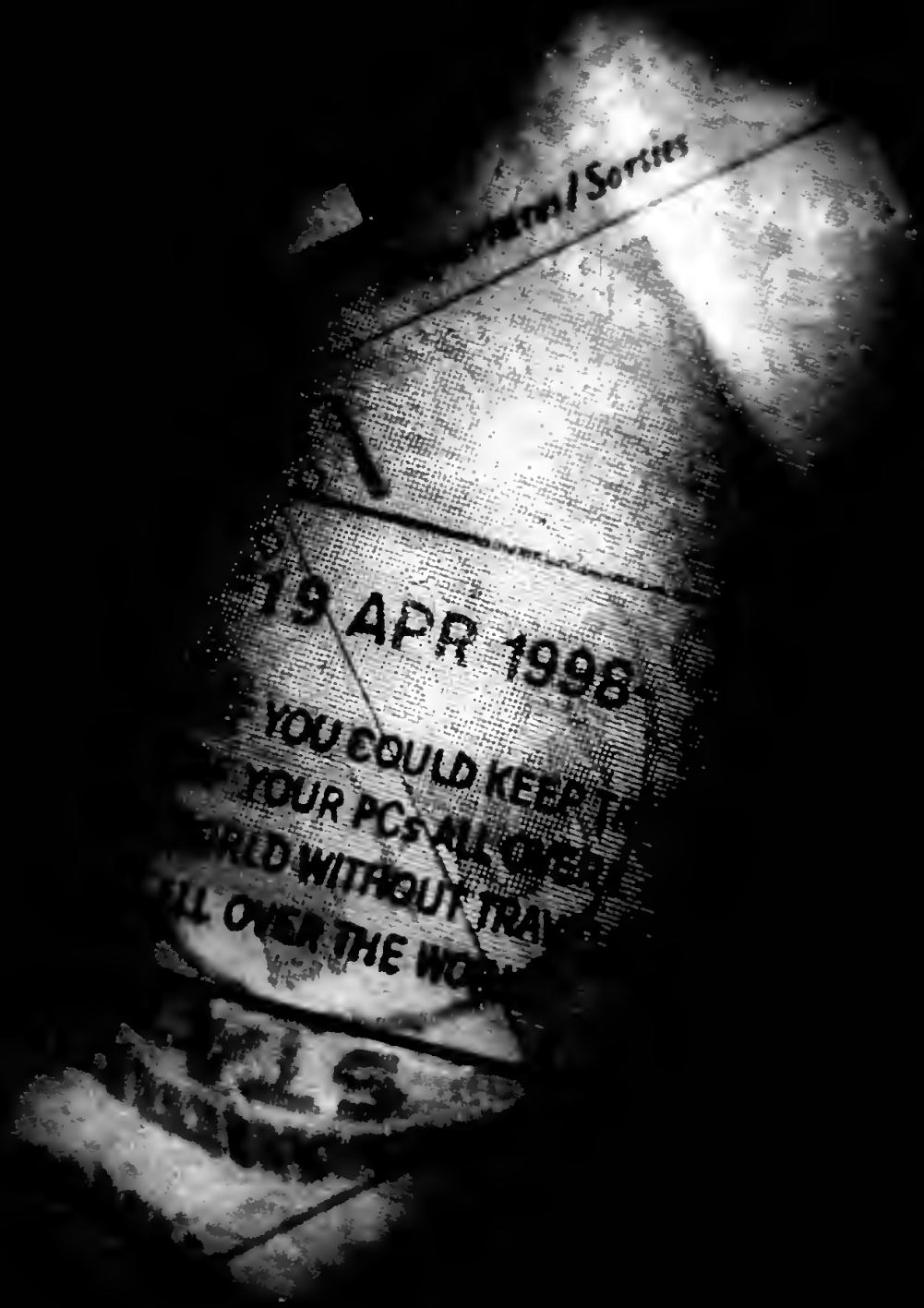
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Expanding Possibilities

IBM makes centralized storage easier

By Jaikumar Vijayan

IBM'S RECENT INTRODUCTION of a new line of enterprise storage products addresses a growing user trend to centralize management of corporate data.

IBM announced new storage resource management software, a centralized hard-disk storage platform and new tape storage resources as part of its evolving Seascape modular storage architecture [CW, June 8].

Seascape represents IBM's effort to make it easier for users to bolt new software features and hardware enhancements onto their existing IBM storage environments.

Products in that architecture include Magstar tape systems, Adstar Distributed Storage Manager backup software and RS/6000 processors.

Seascape storage products, like those from rival EMC Corp., allow users to manage and store data from multiple server environments on a single, large storage box.

The capabilities come at a time when a slew of fast-growing applications such as data warehousing, heterogeneous server environments and widely scattered storage platforms are pushing companies to look for new ways to manage mushrooming corporate data.

Centralizing storage management lets companies:

- Plan storage capacity better
- Improve management
- Use storage staff more efficiently

Centralizing management of corporate data gives information technology managers a better grasp of storage-capacity planning, improves management and allows more efficient use of staff, said John McArthur, an analyst at International Data Corp. in Framingham, Mass.

"There is an overall trend in two directions. One is to physically host and manage corporate data in a central location. The other is to distribute data and put it closer to the user but still manage it centrally," McArthur said.

"Centralized storage management gives better focus to how [you] manage data, and it allows you to understand what you have a little better," said Bill Brong, a technology supervisor at PP&L, Inc., an Allentown, Pa.-based utility.

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Brong knows all about mushrooming data. Over the past five years, applications such as a new mail system and a corporatewide intranet have pushed the amount of stored data at PP&L from a few hundred gigabytes to more than 4T bytes — and it is still growing. One result has been a move to centralize storage for over 5,000 workstations, 120 Unix servers, about 40 NetWare servers and a handful of Windows NT servers.

Having a common storage system also prevents users from having to switch storage boxes every time they change servers, Brong said.

With its product announcement last week, IBM joined a growing list of companies targeting similar needs, including Hopkinton, Mass.-based EMC, Sun Microsystems, Inc. in Mountain View, Calif., and Hitachi Data Systems Corp. in Santa Clara, Calif. □

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Knowledge management promotes sharing

▸ *Revising company information is business goal*

By Julia King

ASK A HALF-DOZEN IT managers to define knowledge management, and you can expect to get six different answers.

But the one point on which they all seem to agree is that business issues must drive every knowledge management initiative.

"Vendors now bill everything as knowledge management. Groupware, data warehouses — you name it," said an information technology manager at a Midwestern financial services company. "But none of it is really knowledge management. It's just more vendor hype."

Users, by contrast, more commonly regard knowledge management as the processes used to capture and reuse information for a specific business end, such as increasing sales. However, the technology employed to do that varies widely and is really incidental, according to users.

For example, Johnson & Johnson, a $24 billion pharmaceutical giant based in New Brunswick, N.J., uses a corporate intranet as part of its knowledge management program. There, the key business goal is to enable researchers in 170 separate companies to share patent and other information.

"The technology is only secondary," said John Hammitt, vice president of information management at the company's Pharmaceuticals & Diagnostics Group.

Consequently, "it's not up to IT to take the leadership role. That has had to come from the business," Hammitt said.

But once corporate goals are set, IT's involvement can be significant.

For instance, at $20 billion Dow Chemical Co. in Midland, Mich., it entailed no less than standardizing about 30,000 workstations and "converting to [Microsoft Corp.] Exchange from every known electronic-mail system there is," said David Burton, director at the company's Global IS and Technology Center.

Dow's three-year "knowledge-sharing" initiative, now completed, yielded a $2 million reduction in software costs the first year. Support costs dropped because IT no longer needed to support multiple hardware and software configurations. Electronically distributing standard software to all desktops also reduced costs.

But more important, Burton said, IT standardization has allowed Dow to shrink bureaucracy and cycle times by linking its 43,000 employees in 33 countries. Those employees now can share product and customer data and research across a single, global entity.

Knowledge management tips

- **Link every knowledge management initiative to a specific business goal**
- **Create an information-sharing culture before investing in new IT**
- **Measure the value of knowledge management in business terms**

HUMAN FACTOR

But along with networking, database and other knowledge management technologies that can vary widely, companies also must provide workers with incentives to share information, noted Dan Rasmus, an analyst at Giga Information Group in Cambridge, Mass.

In this area, companies can learn much from consultancies and other IT service providers.

Price Waterhouse LLP, for example, rewrote job descriptions and promotion policies to spur knowledge sharing among employees.

At American Management Systems, Inc. (AMS), consultants who contribute to the company's a 1/2-year-old Lotus Notes-based virtual knowledge center are recognized on a bronze plaque at the center's headquarters in Fairfax, Va., where clients regularly tour.

Sue Hanley, director at the knowledge center, also regularly publishes a list of the top 10 most frequently used contributions to the center's knowledge database.

Knowledge center contributors also are allowed to attend the annual two-day knowledge center conference, a prestigious event held at AMS headquarters each spring.

So far, such incentives seem to be working. In the first three months of this year, AMS consultants contributed more than 50 new case studies to the database. That compares with 50 new case studies for all of last year. □

MORE ONLINE

For articles, resources, books, events and discussions related to knowledge management, visit *Computerworld online.*

www.computerworld.com/more

Training benefits scrutinized, link to profitability hard to prove

▸ *Survey results don't convince everyone*

By Barb Cole-Gomolski

A NEW SURVEY that links training costs to higher profits is taking some hits from users and trainers who scoff at the connection.

Several information technology managers and trainers have questioned the report's findings, saying it is hard to tie training to profitability, and hence it is hard to get the business side of the house to shell out training dollars.

For example, Nancy Alpert, manager of organizational development at Zurich American Insurance Group in Schaumburg, Ill., said her efforts to connect training to the bottom line have been unsuccessful. "We do follow-up surveys, and we can establish that employees are doing their jobs better after being trained, but tying that to profitability is really hard," she said.

Linking training to profits is something most training managers would like to be able to do.

Spending on information systems training is swelling as companies scramble to fill open jobs. According to International Data Corp., a research firm in Framingham, Mass., the worldwide market for IT education and training will grow to $18.8 billion this year, up from $14.7 billion in 1996.

The findings in question are from a study released earlier this month by the American Society for Training and Development (ASTD), an industry group in Arlington, Va., that promotes training.

In its survey of 40 publicly traded companies, ASTD found that companies that spent an average of $900 per employee per year on training were 57% more profitable than their counterparts who spend about a third as much on training.

FUZZY FINDINGS

ASTD officials said they weren't able to prove that the training led to the profits, but they claimed they could show that firms that spend more on training tend to be more profitable.

Training alone isn't the road to greater profitability, according to Arnie Trillet, vice president of human resources and information management at Johnson & Johnson in New Brunswick, N.J.

But companies that spend more on training are likely to have a corporate culture that values individuals and promotes learning, Trillet said. "I can believe that those kinds of companies tend to be more profitable," he said.

Doug Upchurch, executive director of the Information Technology Training Association in Austin, Texas, agreed. "It's not just training [that leads to profitability]. It's more about having a corporate culture that values knowledge," he said.

Not only is it hard to tie training to profits, but there also isn't always a connection between the amount of money spent on training and the quality of training, some corporate trainers cautioned.

"You can spend a lot of money on classroom training, but that's not always the most effective way for workers to retain knowledge," Alpert said. "You can spend a lot less on a really good computer-based training program that proves to be more effective."

NONBELIEVERS

In fact, companies are getting pickier about where they spend their training dollars.

"It used to be that corporate training managers got a budget and could spend it the way they wanted — but no more," said Beverly Gillis, national accounts manager at Advanced Practical Thinking Training, Inc., a training company in Des Moines, Iowa.

Companies have become more cautious about training because in the past, trainers promised "the miracle cure" that didn't work, she said. □

DOES IT PAY TO TRAIN?

ASTD said companies that spend more on training per employee tend to have higher net sales and profits

Amount spent on training	Net sales per employee	Gross profit per employee
$900	$385,000	$165,000
$275	$245,000	$120,000

Base: 40 publicly traded companies

Source: ASTD, Arlington, Va.

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A search for new heroes: IT innovators lauded

By Matt Hamblen

FOR FOUR STUDENTS from Public School 41 in New York producing videos about drug awareness, teen pregnancy and other tough topics concerning inner-city life has been the thrill of a lifetime.

But none of the teens expected to win the *Computerworld* Smithsonian Award for Media Arts and Entertainment for their efforts.

"I was totally shocked we won, especially that we came out ahead of so many other groups with big budgets," said Zakia Goldstone, 18, a former student at PS 41.

Although none of the four plans, so far, to embark on information technology careers, they see such technology as a tool to help solve social problems. Goldstone will enter Cornell University in the fall, majoring in premedicine. "Information technology is not going to be my major but it's obvious technology helps me in my everyday life," she said.

Winners were announced last week in 10 categories for the 10th year of the awards. Five previously announced leadership awards also were presented. Leadership awards went to John A. Pople, theoretical chemist and founder of the Gaussian Model; Scott McNealy, co-founder and chairman of Sun Microsystems, Inc.; Robert M. Metcalfe, vice president of technology at International Data Group; Vice President Albert Gore Jr.; and Jay W. Forrester, professor emeritus and senior lecturer at MIT's Sloan School of Management. □

Drumroll please . . .

The best innovations of the year were awarded in the 10th annual Computerworld *Smithsonian Awards on June 8. In addition to Public School 41, nine other organizations received awards:*

Science: University of California at Berkeley, for its Search for Extraterrestrial Radio Emissions from Nearby Developed Intelligent Populations. The project uses specialized circuits to match the processing speeds of 200 supercomputers to search 168 million channels of astronomical data at once in the search for extraterrestrial life intelligence.

Business and Related Services: Amazon.com, Inc. in Seattle, for selling 2.5 million book titles over the Internet.

Finance, Insurance and Real Estate: Fannie Mae Corp. and Finet Holdings Corp. in Washington, for their Internet-enabled homeownership site.

Government and Nonprofit Organizations: Focus: Hope, for its Center for Advanced Technologies.

Medicine: Maimonides Medical Center in New York, for its Integrated Health Care Delivery Solution.

Education & Academia: Jason Foundation in Waltham, Mass., for its Education for Jason Project.

Transportation: Science Applications International Corp. in San Diego, for its Vehicle and Cargo Inspection System.

Environment, Energy & Agriculture: U.S. Environmental Protection Agency in Washington, for its Envirofacts Warehouse on the Internet.

Manufacturing: Genentech, Inc. in San Francisco, for its Final Purification Expansion.

(Pictured clockwise from top): Winners on stage; Prof. Jay W. Forrester, MIT's Sloan School of Management, won a '98 Leadership Award; Victor Verbinski, SAIC Award winner; Eleanor Josaitis, Focus: Hope's Center for Advanced Technologies; Stuart Bowyer, graduate astronomy professor at the University of California at Berkeley.

PHOTOS BY MARK PETERSON/SABA

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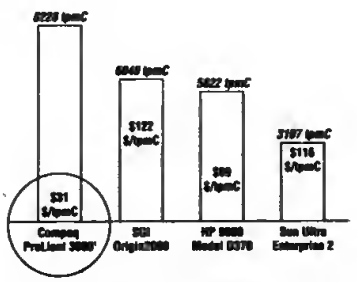

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QUICK STUDY

Hot trends & technologies in brief

Dynamic HTML

DEFINITION: Dynamic Hypertext Markup Language is an extended version of HTML and JavaScript, the languages used for creating pages on the World Wide Web. Dynamic HTML has very precise positioning of text and graphics because it allows the content of a Web page to change each time a user clicks, drags or points to buttons, pictures or other elements on the page.

Specialty technology calls for that extra effort

By Frank Hayes

DYNAMIC HYPERTEXT MARKUP LANGUAGE (HTML) gives developers the ability to create Web pages that look and feel like a real application. But that isn't an easy task.

Most of the world's World Wide Web browsers aren't ready to use dynamic HTML features, which are built in to only Netscape Communications Corp.'s Navigator 4.0 and Microsoft Corp.'s Internet Explorer 4.0. And the two versions aren't compatible; most of Navigator's dynamic HTML features aren't supported on Internet Explorer, and vice versa.

AT ISSUE

Web power at a price

As a result, Web developers must either choose to write for only one browser or use complicated kludges to make their dynamic HTML code work both ways. With either version, the contents of a Web page can change without downloading a new version of the page. That eliminates the annoying flicker of plain-vanilla Web pages.

Dynamic HTML lets users position text and pictures precisely on a Web page. And both Netscape's and Microsoft's browsers support cascading style sheets for controlling the appearance of the Web page. For example, developers can change the typeface and size of every headline in a Web site, simply by changing specifications in a single style sheet.

Microsoft's dynamic HTML is more elaborate than Netscape's and includes the ability to link databases to Web pages and modify content on the fly. Before dynamic HTML, that would have required adding programming code that runs outside the browser, such as Java or an ActiveX component.

Although tools can hide some of the differences between the two versions, Web developers must decide whether the extra effort and limited audience are worth dynamic HTML's increased programming power.

The small audience alone is reason enough dynamic HTML isn't an option for some users today. "Over 65% of the browsers out there don't [support dynamic HTML]. That's why no one ever uses it," says Bob Mason, a software architect at Art Technology Group, a Web consulting and services company in Boston.

Others see the trade-off as worth the trouble. At Omni Healthcare, Inc., a Stockton, Calif., health maintenance organization, all users have Internet Explorer 4.0, and dynamic HTML is used successfully, says Keith Harvey, an advanced technology consultant at Omni.

And *The Wall Street Journal Interactive Edition* uses Microsoft's dynamic HTML for features such as a floating bookmarks window, says Alan Karben, associate director of interactive development at the *Journal*. That risked irritating Netscape users, who have lobbied for similar support, but "we couldn't figure out a reasonable way to do the same things" using Netscape's current version, Karben says.

Neither Microsoft nor Netscape will say when their versions of dynamic HTML will match. And until such browsers take the lion's share of the market, dynamic HTML remains a specialty technology. □

QUICK STUDY ONLINE

For vendors, *Computerworld* articles and other links to dynamic HTML-related materials, go to *www.computerworld.com/more*.

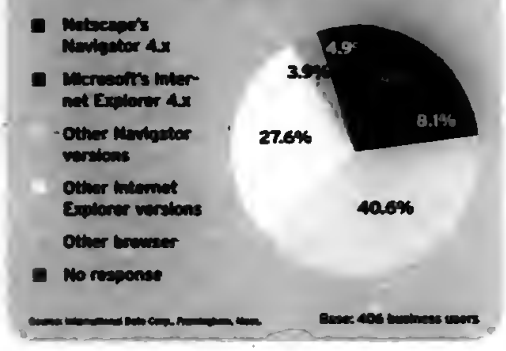
RELATED TERMS

- **The World Wide Web Consortium (W3C):** An independent group that sets standards for Web browsers, servers and languages.
- **JavaScript:** A standard scripting language on Netscape and Microsoft Web browsers that gives Web-page designers capabilities beyond HTML, such as the ability to jump to a different Web page automatically.
- **Cascading style sheets:** A system that allows Web-page developers to create Web page style definitions that specify fonts and screen layouts separately from each Web page's text.
- **Document Object Model:** A W3C specification for how programmers can manipulate elements on a Web page, such as buttons, pictures or text.

Who's got it?

Most Web surfers can't see the new features of dynamic HTML because it's available only with the most recent versions of Navigator and Internet Explorer.

Midsize and large business users with dynamic HTML:



COMPARING WEB LANGUAGES

	Description	Where is it?	Pro	Con	When to use
HTML	Standard set of tags added to Web pages to indicate text, fonts, layout and hypertext links	In all Web browsers	Universally used	Very limited functionality	To reach the widest possible Web audience
Dynamic HTML	Semistandard extensions to HTML for precise positioning and assigning mouse actions	Navigator 4.x and Internet Explorer 4.x	More flexible than standard HTML but without Java's complexities	Limited availability and competing nonstandard versions mean writing each routine for Navigator 4, Internet Explorer 4 and regular HTML	When you know which Web browser your audience has
Java	Programming language for creating Web page components	Recent Web browsers	Complete control of Web pages	Incompatibilities among different platforms	Web applications that require full-scale programs, especially Microsoft's implementation

■ *Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at* ***stefanie_mccann@cw.com***

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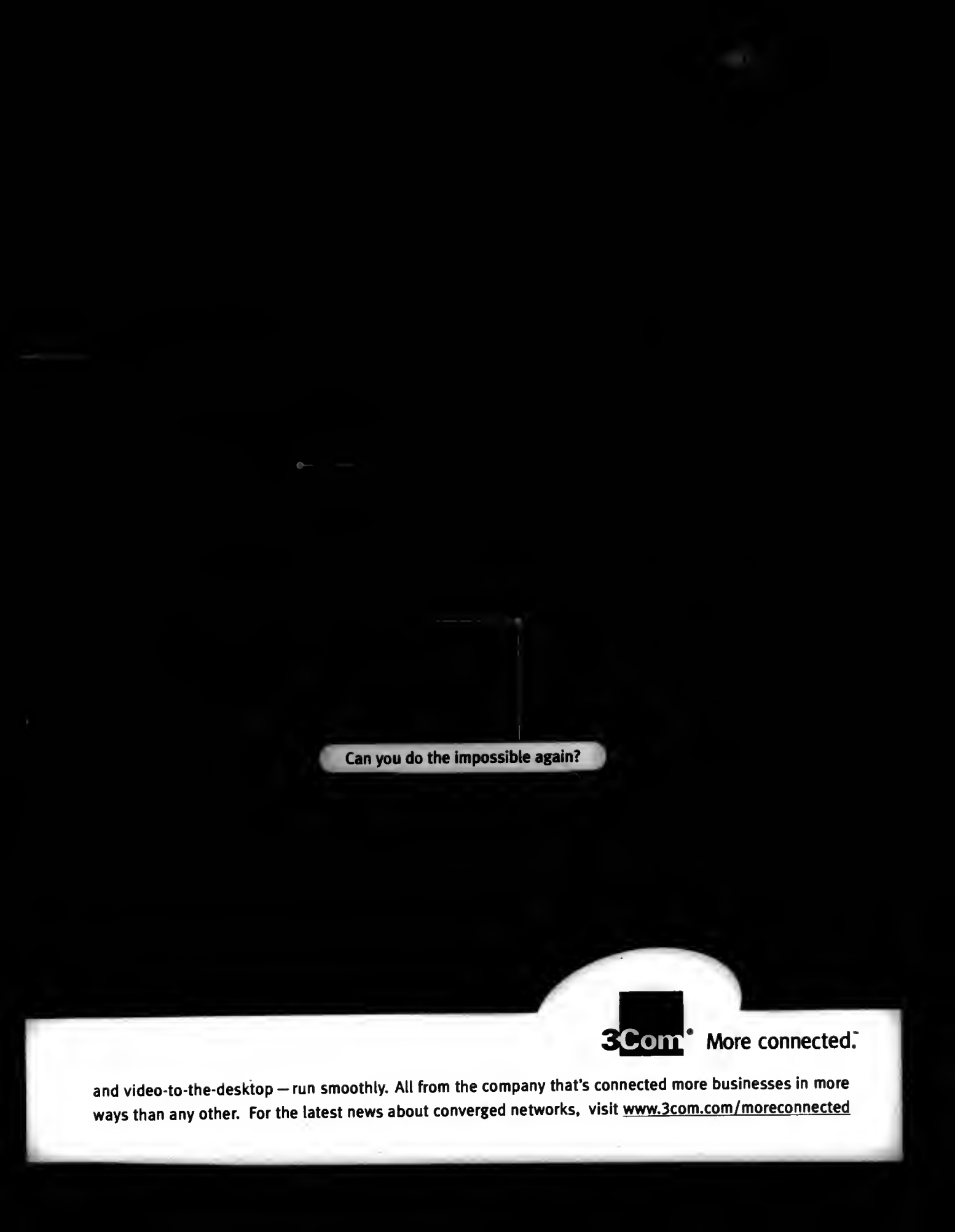

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OPINION

Let 'em in

No naked ladies. No beer. Even lacking those two major attractions for 14-year-old boys, Richard Gilder still wanted to get into the big networking trade show. The Tyringham, Mass., teenager wrote to us [CW letters page, June 8] about his escapades with trade show security guards, who wouldn't allow anyone younger than 18 to enter the show floor at Networld/Interop '98.

Armed with a free pass from his dad, the determined boy stood on his tippy-toes to look taller and tottered by most of the guards. "These nerds are getting smaller all the time," they must've thought.

Actually, they're right. The under-21 set is totally into technology. Author Don Tapscott, one of our columnists, points out that there are 80 million under-21s out there. Most of them are no doubt busy telling their parents what techno-toys to buy. By age 9, one of my teen-agers was asking for her own laptop, a request that unfortunately had to join the "We'll Think About It" list right under "my very own pony." But now that she's as tall as I am and perfecting her own Web site design, taking her to a computer trade show would count as a trip to Disney World.

And, let's face it, most trade shows are tanking. Crowds are sparser all the time. Vendors don't even bother to make big announcements there anymore. Marketing vice presidents wander the aisles like panhandlers.

So let's put an end to the underage discrimination at trade shows. Lobby your vendors to join in this noble quest! What's the upside for them? Tell them the kids will:

1) Find their silly exhibits just entrancing instead of rolling their eyes at that oh-so-clever use of neon lights.

2) Pay rapt attention while they yammer on about their products and show cheesy, overacted videos.

3) Not wince at the booming sound tracks. More likely, they'll want them cranked higher.

4) Eat at concession stands at least once an hour and rave about the food.

5) Be able to help fix that demo when it crashes.

So where do you want the Young Richards of the World hanging out? I thought so.

Maryfran Johnson, *executive editor*
Internet: *maryfran_johnson@cw.com*

WE WANT TO MAKE EVERY EFFORT TO ENSURE THAT ALL OF OUR CHILDREN HAVE ACCESS TO THE INTERNET IN THE CLASSROOM.
JUST AS LONG AS THEY DON'T LOOK AT IT.

LETTERS

Navigator installation nixed by 'security' problem

DON'T TELL ME that Microsoft isn't abusing its market position. This weekend, I was working on my uncle's computer, and I wanted to install Netscape Navigator instead of Internet Explorer, which he was using. I went to the Netscape Web site, but when I tried to download Navigator, Explorer told me it could not do so. A "security" problem was stopping it. Now just whose security do you think it was looking out for?

John Baustian
Palmdale, Calif.
thebaustians@earthlink.net

Sales force automation is booming; problems solvable

COMPUTERWORLD MAKES several good points in its April 6 article "Sales force automation, users clash." Many of the user criticisms of sales force automation systems can easily be overcome with the right mix of innovative technology, greater input from the users themselves and solid training.

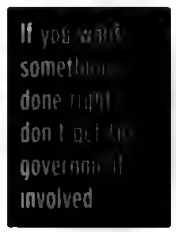
The sales force automation market itself is booming. Gartner Group estimates it will increase from $1.4 billion last year to nearly $4 billion by 2000. With innovations such as Web-enabled thin clients and Windows CE versions, combined with the scalability and performance of new sales force automation systems available today, we believe the problems sales force automation users encounter in the near future will be the smallest of hurdles to overcome.

Ken Moss
Moss Micro, Inc.
Irvine, Calif.

Watch out for Uncle Sam coming to solve cybercrime

I READ EXECUTIVE EDITOR Maryfran Johnson's April 13 opinion piece on cybercrime ["Crime wave"] with interest.

It does not surprise me that retired Sen. Sam Nunn would toss out a figure like that $10 billion one with no substantiation, while the FBI figure cited in the article was $138 million per year. Nunn was, is and will always be a politician.



He is also a longtime practitioner of "more government is better government" and "more government can cure what ails ya."

This is an obvious first step toward a larger government role in policing the IT security world.

If history is any indicator, the next step will be a grandiose plan for the federal government to step in and save us all through a huge layer of bureaucracy and regulation.

All of which will cost businesses millions of dollars in compliance costs, not to mention the taxpayers' money required to "manage" the effort.

I have spent the last 10 years as a consultant working with federal government agencies, and it has taught me one thing: If you want something done correctly and efficiently, don't let the federal government get involved.

David Lee
Chantilly, Va.
davelee@erols.com

Companies need to measure training's effect on profits

COMPUTERWORLD'S March 23 article on intranet-based training, "Seeing is believing," provided a very cogent picture of the advantages of intranet-based training. But wait, there should be more! We've seen the meteoric growth in sales force automation and help desk software.

Corporations want information that shows how well they are serving customers and meeting business objectives.

What we should now be spearheading is enterprise training automation.

Training spending represented $60 billion in the U.S. last year, and intranets enable continual desktop delivery.

What enterprises now need is a way to capture how effectively those training dollars are contributing to profits and productivity. Kudos to *Computerworld* for laying out the landscape. It is now up to companies like ours to build on that.

Nazila Alasti
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Mountain View, Calif.
nazilaa@docent.com

***Computerworld* welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.**

A rare moment of lucidity for Apple

Galen Gruman

Sometimes, even Apple listens. That rare event occurred just recently, when Apple's anything-but-interim CEO Steve Jobs told Macintosh developers he was abandoning the effort to replace the Mac OS with a new operating system, code-named Rhapsody.

Instead, the company will revamp the current Mac OS and offer it as Mac OS X (the "X" is for 10; there will be no Mac OS 9).

Thus, much of the $425 million that Jobs received for Next, Inc. and the core Rhapsody technology when he sold it to Apple 17 months ago will be thrown into a black hole. The same black hole as Apple's near-decade of wasted investment on new operating systems — from Pink to Copland, from Taligent to Rhapsody and from Pippin to Newton. After all, it's been only about $1.2 billion

Still, Jobs made the only realistic decision: Developers had been saying for more than a year that they had little or no interest in recreating their Mac programs for Rhapsody. And when Apple promised a Mac compatibility box in Rhapsody, developers decided to take the easy path and simply stick with their existing Mac software. The relevance of Rhapsody was thus unclear to developers and users alike.

Sticking with Mac OS lets business users breathe easy.

The surprise is that Apple heard that advice and acted on it. I've covered Apple for seven years and can't remember the last time that happened for anything significant.

Of course, what Apple does is increasingly irrelevant for business users. The Mac's market share — even with Apple's increased sales and its two consecutive quarters of negligible profits — hasn't matched what it was a year ago

Sure, Apple's share is back up to 4%, but the licensed Mac clone makers accounted for another 1% of the total market a year ago, so the Mac market is still behind as a whole. And even if it hits 5% again, that's a far cry from the 8% to 10% the Mac enjoyed for most of the past decade.

But the recent Mac OS decision does have relevance for the many businesses that use the Mac for publishing, authoring, graphics creation and Web development. Chances are that big businesses have at least one Mac-using department.

Despite the hype from Microsoft, Windows (95, 98 or NT) doesn't offer the font, color and device support those users need. The Mac still does. And Microsoft product managers have been candid in saying that NT 5 won't have what's necessary to address those needs, either. It'll get closer, but for most high-end content creators, the Mac will still be a necessity.

And that's why Apple's recent decision to stick with its current operating system is important. If your company is flexible enough to support several operating systems for various needs, the Mac platform you intend to support won't require a sea of changes in its operating system — and thus in its application software and low-level drivers. So if you decide to upgrade to Mac OS X when it ships (predicted for late next year), you'll simply have to upgrade some of your applications.

And if you don't want the Mac in your corporation but are stuck with it until Microsoft delivers a credible alternative, you know you can invest minimally in that platform and let your Mac users (who probably do most of their own support anyhow) benefit from the advances that Apple does provide. □

Gruman is Computerworld's West Coast bureau chief and former editor of Macworld. His Internet address is galen_gruman@cw.com.

The ERP/Web tug of war

Michael Schrage

After chatting with European and Australasian CIOs and IT executives during the past few weeks, it's clear to me that a major culture clash is emerging.

That pending battle has (mercifully) next to nothing to do with the euro, year 2000 or ethnic strife. Its most interesting aspect (to me, at least) is whether U.S. companies will find themselves similarly enmeshed.

Observation: SAP, Baan and their enterprise resource planning (ERP) brethren definitely — and defiantly — dominate the management mind-sets of many of Europe's and Asia's leading global companies. For reasons of consolidation and control (but not, apparently, cost), SAP-type software truly has become the gold standard for running transcontinental enterprises. European companies in particular have bought in to the notion that you customize the company to SAP rather than customize SAP to the company. Really.

But there's a computational catch: another Made-in-Europe enterprise software innovation called the World Wide Web. Technically and organizationally, European and Asian companies are years behind the U.S. in appreciating and/or managing what the 'net can do for them. Indeed, one could make a persuasive case that Europe in particular is falling even further behind the U.S. in 'net deployment. The economic traumas now scarring Asia certainly aren't accelerating deployments there.

In other words, there's a fundamental asymmetry in much of Europe and Asia: overinvestment in ERP, underinvestment in the Web. The executives I've spoken with acknowledge that they're building two incompatible enterprise infostructures. They haven't a clue how they'll link them. They ruefully observe that SAP, for example, wasn't designed to be Internetted. Should they be linked?

The techno-sophists say ERPs will be used to manage "workflow" and "process," while their intranets will manage "information" and "community." Well, *bon chance*. The fact that the Web has become a major medium for commerce, transactions and, yes, workflow in many leading U.S. companies seems either deliberately ignored or dismissed.

What goes unspoken, but not unappreciated, is that departments and divisions may use the 'net to bypass the constraints of ERPware. The Asians and Europeans insist they have yet to see signs of that. I give it a year — 18 months tops. Unless, of course, the politics and cultures of control conspire to limit the Web to babbling brooks of bits dammed off from the powerful rivers of ERP-engineered workflows.

That said, ERPware and Webware certainly may be managed as complements and friendly rivals. But it's clear they also may prove direct competitors and bitter enemies. That makes my Asian and European acquaintances nervous. They're sharp; they've lived through a milder version of the PC plague that totally infected U.S. business. And now they're looking at managing ERP and Web infrastructures that embody the essential tensions of centralization and decentralization.

The technologies can be complements – or bitter enemies.

Those are precisely the issues U.S. companies face as they look to SAP, PeopleSoft, Baan and even Oracle for their enterprises. But what about those pesky intranets? What are their migration paths to ERP emulation? Better yet, how can we co-opt the 'net by, ahem, extending and embracing the ERP into the IP portfolio?

The future is blindingly clear: Reconciling ERPware and Webware will be the next billion-dollar consulting/middleware marketplace. But the organizational pain of managing that merger will more than rival the technical pain. □

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Loyal is as loyal does

Allan E. Alter

They say loyalty is dead in IS. That nothing matters but the bucks. They don't know people such as Mark Gillis, a systems engineer who worked in IS at a Western retailer for seven years. Then the company was bought, the culture changed and, Gillis says, "the good times halted."

An IS professional moves 2,500 miles because he believes in his bosses.

When both Gillis' boss and the CIO took new jobs at Pelican Cos. in Conway, S.C., a building materials retailer that targets contractors and construction companies, Gillis followed.

"I uprooted my family, sold the house and moved across the country to a small burg on the East Coast," Gillis messaged me after he read a recent column in which I discussed loyalty [CW, April 13]. "We live in the woods on a dirt road, and I work my legs off every week." And he doesn't make more money than he did before.

So why did he move? "These are my comrades-in-arms, either of whom I'd go through hell for." Again, why? "Loyalty. I show it to them. They have both expressed it to me many times."

I couldn't get Gillis' note out of my mind, so I called him to find out more.

I learned that his bosses showed loyalty to Gillis when a project went well. "I have worked for managers who stood up at the board meeting and took credit for things I've done." Not those two. At one interdepartmental meeting, someone asked about the status of a successful store automation project. "The CIO, Bill Seay, said, 'Here, [Mark], you did it. Tell us what you did.' "

Gillis told his family about the recognition because he felt so good. "People need to feel a sense of belonging. I felt what I did was valuable and appreciated."

Gillis' boss, Bill Webb, shows loyalty to Gillis when he gives him a job to do — unlike some managers Gillis has known, who micromanaged his work or, just as discouraging, undercut his authority when he tried to enforce network security and compliance.

Gillis says that when he asked Webb if he had to check with a micromanaging vice president before obtaining software auditing tools, Webb told him, "Nope. It's your job. You've identified a tool, you go do it. If he has any questions, I'll talk to him."

Webb took the heat when things got rocky. When Webb was called in to justify the decision, Gillis says the "results never trickled to me. [Webb said], 'Don't worry about it, I took care of it, just keep going.' "

The experience made Gillis feel, yes, empowered. "I was able to do the job I was given without being artificially hamstrung."

Finally, Webb shows loyalty to Gillis when the subject of pay comes up. "I trust Bill Webb," Gillis says. "I know if I continue to do a good job, he will do his best for me on salary, benefits — whatever. I don't worry about getting screwed."

In this day of sky-high salaries, "portable" retirement plans (because nobody plans to stick with one company for long) and savage recruiting, it's important to remember how much loyalty you can inspire in your staff by returning loyalty.

"Could I make more elsewhere?" Gillis asks. "Heck yes, with 17 years in Unix, NT, NetWare, etc. under my belt. But why kill myself for someone who won't go to bat for me?" □

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Year 2000 question: Where was Al?

David Moschella

I think I must be just about the only columnist in the computer business who's never written about the year 2000 problem. That's because I really don't have the slightest idea what will happen when we get to Jan. 1, 2000. Will there be chaos in the streets, or is the year 2000 problem the loudest false alarm since the "energy crisis"? Got me.

I was explaining my ignorance to a politically active colleague, and because neither of us could say much of substance, we wound up parsing the politics of it all. We were particularly entertained by two questions:

1. Why has there been so little stockholder and taxpayer outrage over the cost of the foul-up?

2. Why has Al Gore chosen to go AWOL on the issue?

To understand the first question, suppose that only the government had failed to prepare itself for the year 2000. Think of the outcry, the jokes, the endless mockery of bureaucrats so stodgy and out of touch that they couldn't see the end of the century coming. Forget about $1,000 toilet seats and $100 screwdrivers; just think about how many school lunches could be bought for the $2.3 billion the government admits it will spend.

BACK SCRATCHING

But because the private and public sectors have been equally culpable, they've somehow managed to shield each other. I'm amazed at how many times I've read that given the cost of computing in the 1960s, a two-figure date field really was a sound business decision. Never mind that there were those other decades — the '70s and '80s — when the issue was left to fester. It's hard to imagine a better example of the public and private sectors' ability to completely ignore a serious problem for as long as possible. Think safety and pollution.

It is certainly understandable why only year 2000 consultants seek to be personally associated with that issue. They can't lose. If all kinds of disasters do occur, they can say they warned us. If nothing happens, they can expect our thanks for fixing the problem.

In contrast, for business leaders and public officials, the issue has always been a loser; it's much easier to blame one's predecessors than to stand up and be accountable.

Nevertheless, the silence from the vice president's office has been particularly conspicuous. No one in politics has worked harder at developing a technology-centric image. Yet in what is arguably the biggest technology policy issue of the 1997-2000 period, Gore has uttered hardly a word.

The vice president has hardly uttered a word on the biggest IT policy issue of the period.

What makes his silence so ironic is that the vice president clearly faces his own year 2000 challenge. As the almost certain Democratic presidential nominee, everything Gore does is aimed at winning the November 2000 election. Here the possibilities are rather delicious. Imagine that come Jan. 1, 2000, all kinds of weird glitches start driving the country crazy. What would Gore say out there on the campaign trail? After all, he will have been vice president and self-appointed technology czar since 1992.

In presidential politics, one generally can assume that all major decisions have been carefully calculated. Gore appears to be betting that year 2000 will prove to be no big deal, with the built-in hedge of not actually coming out and saying it. For his sake and ours, I sure hope he's right. □

Moschella is an author, independent consultant and weekly columnist for Computerworld. His Internet address is dmoschella@earthlink.net.

ALLIANCES

Customers can rely on certified VARs for Sun expertise

"It's important that [VARs] are certified and well-trained to best serve the customer."

Masood Jabbar,
president of Sun Microsystems

SUN MICROSYSTEMS EXPECTS A LOT FROM ITS RESELLERS. EVERY SUN VAR MUST HAVE the expertise to deploy and maintain every facet of a customer's computing environment.

That's why Sun requires that its VARs go through its Competency Certification program. A Sun VAR that finishes this training is certified at one of three levels: Workgroup Computing, Enterprise Computing or Specialty. A reseller who doesn't finish the program is finished as a Sun VAR. It's that simple.

Certification guarantees a potential customer that a Sun reseller has the expertise to support Sun installations in pure or heterogeneous computing environments, and that the reseller fully understands Sun technology and how it can be applied to best meet the customer's needs.

Currently overseeing the certification program is Masood Jabbar, a 12-year company veteran who became president of Sun Microsystems in February. Jabbar believes that resellers are crucial to Sun's success. "We built this company on the premise that we will always treat our VARs as an extension of our organization," he says. "They represent Sun, and they solve very complex issues. It's important that they are certified and well-trained to best serve the customer."

In addition to customers, the program also benefits Sun and its resellers by serving as a key to healthy channel management, as well as working to reduce grey marketing and the distribution of product without value-added services.

Every one of Sun's approximately 600 VARs in the U.S. has made a significant investment in the program. Not only have they sent their key people through the program to achieve initial certification, they also must continue to take education credits annually to maintain their Competency Certification.

VARs who complete the Workgroup Computing Certification are trained to configure and maintain Sun's Desktop and Workgroup server product lines and to construct network solutions tailored to a customer's business. They can also help with hardware and software support, or upgrade a customer's installed base.

Enterprise Computing-certified resellers have a command of large storage systems and client-server applications. They can size, configure, install and support departmental and data center server solutions. Enterprise Elite resellers have made an extra commitment in training additional technical support personnel on Sun technology.

Specialty Certification is offered in areas such as E10000 enterprise server, A7000 storage server and, of course, Java. "We've fully engaged our VARs to take Java to market as a platform," says Jabbar. "We have to have more Channel Java Computing Services providers. This is key to our strategy."

To further address the needs of customers with heterogeneous environments, Sun recently added an NT interoperability component to its certification program. "Our customers have integrated environments, and I don't want VARs to ignore NT," says Jabbar. "We will interoperate with NT. SunLink 1.0 is out now to support that."

Jabbar wants to see the concept of Sun Certification grow. "If anything," he vows, "I will make the certification program even more prevalent, so that all our employees are fully certified and fully trained in everything that Sun offers."

AC TECHNOLOGY, INC

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AC Technology, Inc., started in 1991 as a reseller focused on systems integration whose mission was to develop Unix-based turnkey solutions for government, financial, telecom and commercial customers.

Today the company is a Sun reseller certified at the Enterprise Elite level. It sells the full line of Sun workstations, servers, mass storage systems, software and services. The company also has Specialty Certification in Java computing, Sun clustering and E10000.

This reseller offers a team with a staff average of more than 12 years' experience in complex hardware and software integration, ruggedized information systems, legacy conversions to Sun platforms, server and database migration, RAID design and implementation, high availability and parallel database installations, and network management.

AC Technology performs site surveys and analysis, systems and network capacity planning, server sizing and blueprinting, network design and implementation, RAID design and implementation, Internet and intranet design, system and network security, and design and implementation of network operations centers.

The company also produces ruggedized custom rack mount and deployable solutions, which are often used by the military. "Our deployable Sun workstations and servers are built to withstand the extreme conditions of combat areas," says executive vice president Arthur Sands. "We are currently completing the design and implementation of the first deployable E10000."

INTERVIEW

ARTHUR SANDS
EXECUTIVE VICE PRESIDENT

Q *Why is a VAR's certification so important to a potential customer?*

A If the customer is going to commit to Sun for an enterprise solution, the VAR providing that solution should be just as committed to Sun as the customer. Certification means the VAR can not only sell a solution but also support it completely. If the VAR doesn't understand all the technology, then they're not providing a total solution.

Q *Have you closed any deals because of your certification?*

A We recently completed an installation at the U.S. branch of a cell telephone company that's going into the ISP services business. The company is a large Sun customer in Europe, but a new company in the U.S. and they didn't have technical support here.

They wanted a Sun server, but they needed someone with a background in both Oracle and Cisco to provide a turnkey solution. Sun recommended us as a VAR because we could provide the total package, including service.

Q *What is the biggest concern of your customers today?*

A That whatever they buy today can be obsolete tomorrow. At the enterprise level, when you invest in technology, you need to look at planning for the future. At this time, Sun has the best growth plan because with Solaris, the same software runs on all their desktops and servers. You can start with a small server or workstation and go all the way up the upgrade path to the E10000. All the software you wrote for that server will still run. And when you want to move up, your software investment moves with you. It's like getting a built-in technology refresh..

Q *Are you doing anything with Java?*

A Mostly on the professional services side. We develop server applets for clients. They all have Java engines. But because we spend more time at the enterprise level than at the application level, we don't really concentrate on Java.

Java is evolving as an application language. It's very easy to work with on any system, including Unix, NT, etc. We'll see the services side of the business grow as Java applications become more widely accepted.

AISG

ADVANCED INFORMATION SYSTEMS GROUP, INC
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Advanced Information Systems Group, Inc., (AISG) is a reseller focused on integrating enterprise solutions, including security, interoperability, and infrastructure solutions for IS workgroups. These infrastructure solutions include networking, Internet/intranet and operating systems services.

The company sells to both the government and commercial marketplaces. While most of its business is derived from the commercial sector, the company is also approved as a government VAR for Sun.

Founded in 1991, AISG has been a Sun VAR for four years. With 75 employees and some $15 million in 1997 revenue, AISG ranked #33 on *Inc.* magazine's annual list of the top 500 privately held companies in the United States.

AISG is Sun-certified at the Enterprise Elite level. The company maintains a staff of Sun Competency-certified experts in areas such as systems and network administration, systems performance analysis, systems security, help desk design, remote systems administration, systems and application installation, operating systems migration and project management.

"Our customers are making a bigger investment in the enterprise solution," says Kevin Jackson, founder and president of AISG. "Because this is a mission-critical area, our certification is important to them. The customer is keenly aware of these areas, and the certification is a true differentiator because it shows that we have the required expertise in the Sun world."

AISG is Java-certified, and offers Java design, development and training. "We see ourselves growing in that arena, and we expect to be adding more consultants there," says Jackson. The company is currently building two Java-based applications: a telephony application and a kiosk application.

KEVIN JACKSON
PRESIDENT

Q: Why is a VAR's certification so important to a potential customer?

A: Certification differentiates us from non-certified, non-qualified VARs that are out there selling systems. This is very important to the user. It separates us from the competition, and to the customer it is an assurance that we really know the product.

Q: Have you closed any deals based on the expertise you received from certification?

A: One deal involved providing a reservation system for a large family entertainment company. The customer needed to know that we maintained a close relationship with the manufacturer. Our certification provided that.

Q: What is the biggest concern of your customers today?

A: Whether their next move will be NT or Unix. We're assisting a lot of those companies in rightsizing the best solution to their platform. Interoperability is really important here, especially in integrating NT and Unix.

Q: What's been the biggest change in your business in the past 12 months?

A: We've noticed a huge shift to Unix servers. Companies are embracing Unix. We've also seen a higher degree of NT being used, so you have to justify the move to a mixed solution, especially at the lower end of the workgroup market.

Q: What do you see as the main benefits of using Sun technology to support heterogeneous environments?

A: Sun products are very integratable. Their interoperability is almost unprecedented.

CENTRAL DESIGN SYSTEMS

CENTRAL DESIGN SYSTEMS, INC
1705 Wyatt Drive
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Central Design Systems, Inc. was founded in 1994 as a Unix reseller with a focus on systems administration. Today the company delivers Sun mission-critical solutions (including network design; enterprise, departmental and workgroup servers; and remote systems administration tools) to companies ranging from chip designers and other manufacturers to financial institutions, telecommunications utilities, retail outlets and Internet service providers.

The company is authorized and certified by Sun to sell all of its Enterprise and Workgroup Computing lines. Central Design has also achieved Sun certification in security, high availability, Internet and intranets, and maintains Sun core competencies in high-end servers, enterprise networking, application tools and professional services. These services include installation and integration of various applications, web authoring and customer training.

Central Design focuses exclusively on Sun Microsystems. "Sun is tried and true," says Eric Hughes, vice president of marketing. "Customers who made that move to NT are now saying that in the short run NT may look cheaper, but in the end it is more expensive. They're finding that they've painted themselves into a corner with NT."

Earlier this year, Central Design sold its Wyatt River Software spin-off, a provider of Java-based license and asset management tools. However, the company is still interested in pursuing the Java tools market, and is looking for new technology to acquire, particularly "Java solutions for the systems administration world," says company president Bill Ames.

BILL AMES
PRESIDENT

Why is a VAR's certification so important to a potential customer?

It's important that the customer gets quality service that's been approved. Certification sets us ahead of the competition. It shows that the bar has been set.

Can you tell us about a deal you closed based on your certification?

I can tell you about the time certification almost wasn't enough. A recruiting firm came to us who already had a web page, but the system was slow and the company was losing valuable information. They were looking for a company to do all of its backup and systems analysis.

They had already tried one VAR, who had positioned itself as authorized and certified. But the recruiting firm soon unfortunately discovered that the VAR was sorely lacking in the necessary expertise. So now the customer had an "I'm from Missouri" attitude. To this company, being certified no longer meant that much. Just to win the project, we had to clear the hurdles that previous reseller's lack of experience had caused. We had to go above and beyond to prove ourselves to the company.

Then, of course, we had to make sure the system worked better than the customer could have hoped. But we were able to do that. We did all the necessary analysis, then implemented a new system, and new backup. I guess you could say that true certification won out in the end.

What is the biggest concern of your customers today?

The need to be always up and running. Even a day of waiting is a problem. These companies need the fastest tools possible. Their turnaround time is nine months, so there is a new product out every nine months. In that environment, you really can feel even a day or two of downtime.

What are the main benefits of using Sun technology to support heterogeneous environments?

That Sun has always had an open computing belief. Sun makes everything play well together. That sounds like mother and apple pie, but it really works.

CONTINENTAL RESOURCES, INC.

CONTINENTAL RESOURCES, INC
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Bedford, Massachusetts 01730
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Continental Resources, Inc., is a reseller focused on full-service systems integration, particularly in heterogeneous environments. The company also offers expertise in network design and implementation, systems management (including applications such as scheduling), storage management, performance monitoring, data mining and tuning.

The company has a number of Sun Competency-certified specialties, including StarFire 10000, clustering, high availability and parallel database, and is certified to sell the entire Sun line, from desktop clients to high-end servers. The company is certified at the Workgroup and Enterprise levels.

Continental Resources offers a suite of solutions for the Internet/intranet model, including the Netra internet gateway server product, the Web server, Netscape software, firewall solutions, encryption systems, and high-end encryption and anti-hijacking products.

The company has started to provide enterprise resource planning (ERP) solutions, through a combination of products from Informix, Oracle, SAP and Sun. Due to the nature of the heterogeneous environments, Continental Resources also provides PC-based systems.

But the company's focus is the integration of disparate environments. "We recognize the need for having a mixed environment in our customer base," notes company president Jim McCann. "We can help with the integration."

The company also does upgrades, which "is a very underutilized market for Sun and resellers," says McCann. "The customer may not realize it but their existing platforms may be obsolete. We try to let the customer know that the technology has changed, and that there may be a faster, more cost-effective solution for them and without it the ability to grow their company may be compromised."

INTERVIEW WITH

JIM McCANN

PRESIDENT

Q Why is a VAR's certification so important to a potential customer?

A It's the guarantee to the customer that we know what we're doing. The customer is investing a lot of money to get the most support, and needs to know that it's a safe bet.

Q Have you closed a deal based on your certification?

A We had a customer that brought in a deal that involved Sun, SAP and another vendor. This was a critical application, so it needed high availability and a backup solution. The project also needed to be on time and on budget. So they had to be absolutely sure that the solution they would get was the right one, and our certification assured that.

Q What is the biggest concern of your customers today?

A The ability to integrate heterogeneous environments. Most customers have mixed environments, and it's a big challenge for them to integrate all this into one whole that operates seamlessly.

Q What's been the biggest challenge for your business in the last 12 months?

A The big challenge is getting the right people. Because of the explosive growth of Unix as a solution, there has been a sharp increase in demand for services, and sometimes outsourcing. Companies with a shortage of people can't devote their people to these issues, and some staffs have had to shift duties to their Year 2000 concerns.

Q What is the main benefit of using Sun technology to support heterogeneous environments?

A Scalability. Most of what Sun designs is very modular. Say you buy an E3000. There are slots in the chassis, and everything in the I/O board is completely interchangeable. You can grow your server. There is also binary code compatibility, so you can run on the E6000. Your investment is still there. This is a great financial benefit to the customer. We tell customers this is a "happy" problem. It means their business is growing great guns.

Dynamic Systems, Inc.

DYNAMIC SYSTEMS, INC
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(626) 795-4101 Home page www.dynasys.com

Founded in 1991 by Chuck Stygar and Mardi Norman, **Dynamic Systems**, Inc., has evolved from a seller of **PCs to an integration** and networking specialist that **focuses on Unix** solutions for government agencies and **prime contractors.**

Services offered by the company include systems and **network integration**, configuration of servers and workstations **and Internet** set-up and design. The company **also offers custom** Total Solutions Packages in the areas **of Internet**, intranet and extranet security; system performance **tuning**; data management; storage management; **and high** availability.

The company also specializes in EDI JIT, a solution **that will help** government agencies and contractors **comply with** the mandate to be online with EDI by the **year 2000.** "Our customers' interest is in having the **ability to move**, manage, and protect their data," says **company vice** president Norman.

Dynamic Systems is Sun Competency-certified at **the Enterprise** level. The company has Specialty **Certification** in Java computing, SPARC Storage Array **and Solstice PC**, and is currently developing a Java-**based configuration** tool, notes Norman.

The company is also a certified reseller of network **security software**, including Sun's SunScreen SKIP and **EFS, Solstice** Security Manager, Solstice-Firewall-1, **Trusted Solaris**, NFS Security and Solstice SPF-2000.

An integration team provides customers with hardware **integration and** implementation assistance to **create a smooth**, heterogeneous environment in their **organization. The** company also has a certified electrostatic **discharge** room (ESD) environment "which **allows us to protect** our customers' investment when we **do integration** and configuration work on their high-**end workstations** and servers," says Norman.

INTERVIEW WITH

MARDI NORMAN
VICE PRESIDENT

Q *Why is a VAR's certification so important to a potential customer?*

A Our customers want to know that the people working on their solutions are qualified. Being a certified VAR proves to them that we have the capabilities to perform the tasks that they require us to do. We are just like any other profession; there are standards that we need to hold ourselves to. You wouldn't hire a lawyer that hasn't passed the bar, and you wouldn't have a doctor operate on you if that doctor wasn't a qualified surgeon.

Q *Have you closed a deal based on your certification?*

A On a project where we were competing with another reseller, we supplied our salespeople with all of our certificates to show where we were certified. This customer wasn't extremely familiar with the certification program, so we had to educate them. We ended up doing a fax blitz, sending all of our certifications to them. It impressed them to no end. That our staff had gone through complete certification was a real feather in our cap.

One part of our training that addressed this customer's needs was Volume Manager, which we had Sun Certification in. The other reseller couldn't say they had the certifications that we had.

Q *What is the biggest concern of your customers today?*

A Customers must manage and control large amounts of data and secure or protect their intranets and extranets. We provide these solutions by moving, managing and protecting their data through our custom Total Solutions Packages.

Q *What's been the biggest change in your business in the last 12 months?*

A Winning a large EDI JIT contract with an aerospace firm. The federal government has mandated EDI JIT procurement by the year 2000. This is expected to greatly reduce paperwork. An individual will be able to use EDI JIT to order a product they need via EDI. Everything will be automated, including warehouse inventory. The product will ship in three days.

While manufacturers have been using EDI for some time with their distributors, now we're addressing the end-user side. The manufacturer, reseller and end user will be tied together. This completes the chain.

Peripheral Vision InfoSystems

PERIPHERAL VISION INFOSYSTEMS, INC.
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Peripheral Vision InfoSystems, Inc., (PVI) was founded in 1987 to deliver enterprise solutions to Fortune 1500 companies. Today it specializes in network and enterprise computing, custom Java applications and JavaStations, Internet, intranet and extranet access and security, database and data center development, and clustered systems. PVI leverages a company's existing resources to design and implement the network.

The company is certified at Sun's Enterprise Elite level, at which it carries several certifications, including Enterprise 10000, Java computing, SunService, high availability, parallel database and Netra, and will soon receive its storage certification. PVI was also recently certified to be a Sun training center in areas such as Solaris, Java, Unix and Netscape Server.

PVI uses Java extensively. In building the third tier, it uses Java in conjunction with application servers. "By dropping in the third tier, you can pull information into the database with business logic, middleware tools, and Java, and put it through a Web server and then deploy it on a browser," says Kane.

PVI also uses Java for terminal replacement. "A lot of companies are running aging applications on minis," says Kane. "Our focus is to get rid of the high maintenance PCs and dumb terminals that don't have functionality, and put in Sun Servers and JavaStations. There are a lot of benefits in this: more speed, TCP/IP and a new security model.

"The old mainframes and minis are just used to serve the data. You can retain the same user interface, but add new functionality, like e-mail, calendaring and web browsers, for a very small price. You get a huge increase in productivity, you save big bucks in administration, and you can control everything centrally."

INTERVIEW

SCOT KANE
PRESIDENT & CEO

Why is a VAR's certification so important to a potential customer?

A The phenomenon of open systems scares a lot of people. Certification gives the customer confidence in the full solution, which is 30% technology and 70% applying it. They also know that the manufacturer endorses us and that we have that level of proficiency.

Has certification helped you close a deal recently?

A A major greeting card company was looking to move their mainframe data, which encompassed applications like order entry and sales, out to 300 client stores. This required training 12 of their IT staff members to become architect integrators. We had the certification to do that. We put them on a 12-week program. They had no knowledge of Unix or Java. We taught them things like naming services, TCP/IP, HTML, firewalls, all the fundamentals of open computing. Then we provided a series of Java classes. They ended up with an internal architecting group that can do integration, and can use the newer Java tools.

We won that account because of our certification. We didn't just sell them equipment, we sold them our knowledge, training and consulting. We showed them how to apply the technology.

What is the biggest concern of your customers today?

A The need to support an open world. The biggest concern is "how to get there." Everyone is trying to figure out what the components are. But the real problem will be how to re-engineer their processes to move the company with the technology changes.

The networked world changes the boundaries within an organization. You're integrating the past, applications of the proprietary world, into today's open model. Allowing for this integration will allow companies to get closer to their customers and partners. They will need central control and administration.

What are the main benefits of Sun technology?

A The benefits revolve around reliability, availability, serviceability and scalability. I can put in a solution, scale it without having to rip out the architecture or changing the underlying business logic.

SOLID SYSTEMS, INC
One Northwest Centre
13831 Northwest Freeway, Suite 450
Houston, Texas 77040
(713) 934-9494 Home page www.solidsystems.com

Solid Systems, Inc., was founded in 1983. Today the company provides enterprise solutions for Fortune 1000 businesses, goveenment agencies and educational institutions. These solutions include network design and management, Internet/intranet integration, data center migration, high availability and fault tolerance, data backup, retrieval and storage, and disaster recovery. The company claims particular expertise in the areas of enterprise-wide data management, network integration and storage management.

Solid Systems is Sun Competency-certified and E10000-certified. The company sells the entire Sun line. "We've invested heavily in Sun's vision, because it's compatible with our vision for the future," says CEO Bill Cruise.

To meet the needs and business objectives of its customers, Solid Systems provides contract professional software and network services for Unix, Novell and Microsoft NT users. The company offers training at its training facility in Houston or at the customer's site.

"Our mission is to provide a high degree of technical expertise for our customers," says Cruise. "We must always be up to date from a technology standpoint."

WITH THE WIT

BILL CRUISE
CEO

Why is a VAR's certification so important to a potential customer?

A Certification ensures our customers that they are working with a company that can provide the best technical expertise. Sun's certification gives visibility to the fact that we are involved with the most current technology.

Have you closed a deal based on your certification?

A Under Sun's Competency certification program we have the E10000 specialty, Sun's largest system. That has allowed us to close several million dollar deals. Without that specialty, those deals wouldn't have been available to us. We were able to provide up front information that helped these customers make a decision based on the knowledge we had. We were very involved in the pre-sales decision-making process, the implementation and ongoing support.

What is the biggest concern of your customers today?

A Our customers are faced with many competing solutions to address their business problems. Making the right decision about those solutions offered to them is perhaps the most significant concern they're faced with.

Do you see your business evolving because of Java?

A Yes. We have already qualified for the Java Computing specialty, as well as other specialties. We see it as extremely important and that's why we've invested heavily in this Java certification. In the future, Sun will be the lead technology provider because of their investment in Java. We're already investing in that vision.

SOUTHERN OFFICE EQUIPMENT
4424 N. Lois Avenue
Tampa, Florida 33614
(813) 873-1112 Home page: www.soffice.com

Southern Office Equipment is a reseller offering total solutions systems integration with a focus on networks. According to company president and founder Joanne Miller, that means "not just simply knowing how to hook up the network. It includes third-party integration, working with multiple operating systems, extending past multi-file sharing and printing, and making use of all the software available."

The company was originally formed by Miller in 1989 to sell PCs from Digital Equipment Corp. to state and local government. But less than six months later, she saw that her company needed to provide a full solution and she began evaluating vendors of mid-range systems.

The company made the switch to Sun Microsystems two years ago, partly because, Miller says, she "found a huge interest in Sun within my customer base. Once I talked with Sun, I found that their philosophies were very much in line with my own."

Southern Office Equipment has been ranked among Florida's Fast Track 25 by the *Tampa Bay Business Journal* for three years in a row. Miller attributes this to her company's philosophy of focusing on the customer, and determining how a solution will work best for the customer.

To get to that point requires cooperation from the vendor. "I started out in the business when channel-friendly was a foreign word," she says. "Working with the other vendors was like pulling teeth. It all comes down to the same issue: The manufacturer must have a good relationship with the customer. Sun has that."

Certified at the Enterprise level, the company, says Miller, "offers state and local government guaranteed services backed by a vendor who invests in education and technology." The company is also certified in Java computing; Java, she says, plays a key role in her company's work in network computing and the Internet.

JOANNE MILLER
PRESIDENT

Why is a VAR's certification so important to a potential customer?

Any city or county department that provides services has to be sure their systems are always up and running. If not, you'll hear about it on the news. They must have fault tolerance and high availability. You have to provide people with disaster recovery, especially here in Florida with the unpredictability of hurricanes and tornadoes.

Without certification, there would be no proof that people are going to give you a verifiable working solution. There are a lot of box pushers out there. A person might not really be capable of delivering a solution.

Have you closed a deal based on your certification?

Yes, with a water management department that would not even entertain any VAR that was not fully certified. They could not afford to get stuck with poor service or equipment they can't maintain. They have to be up 100% of the time, even through flooding. Customers must always have fresh water.

In the past, when they dealt with non-certified vendors, they were left with solutions that didn't work. They bought from us because they needed Sun Competency certification.

What is the biggest concern of your customers today?

Scalability. State and local government need to know they're buying something that will last. Their biggest fear is they haven't spent taxpayer dollars prudently and wisely. They can't be upgrading in two years. They need to know they're buying something that will last and grow with their needs.

What changes do you foresee for your business?

We plan to become certified in Sun/NT integration. We're thrilled to see the addition to the training schedule of integration of Windows NT with Solaris. There are still many legacy systems that must utilize all of the resources in an organization, including Novell and NT. We can't go to our state and local governments and ignore that they have NT in there.

TACTICS, INC.
1800 Century Blvd., Suite 1450
Atlanta, Georgia 30345
(404) 248-1226 Home page: www.tacticsus.com

Founded in 1993, Tactics, Inc. today positions itself as a reseller offering systems integration and consulting services, specializing in Oracle Corp.'s database, tools and packaged applications. "We focus on the database solution more so than on the software/hardware solution," says CEO Dewey Blaylock.

"We are able to use that database expertise to bring in the software and hardware products and the systems engineering expertise to the customer," says Blaylock. "They find one company that is able to bring them the full, integrated solution." But Tactics is also Sun Competency-certified at the Enterprise level, with E10000, A7000 and data warehouse certifications.

The company's major lines of business include electronic commerce, application development, data warehousing systems, database administration services and mobile solutions. Its expertise includes design and implementation of client/server and web-based custom software applications; remote 24x7 operations center support; and the design of web-based solutions coupled with corporate databases.

Tactics utilizes its own implementation technology, involving the client with prototyping for better user understanding of functionality and support upon implementation. Web-based developers bring extensive experience in Java-based applications. On-site user training is also offered.

The company is growing fast. In 1997, the number of employees reached 190, up from 125 in 1996. Revenue grew from $17 million at year-end 1996 to $25 million last year.

DEWEY BLAYLOCK
CEO

Q. Why is a VAR's certification so important to a potential customer?

A. Certification is as important to us as it is to our customer base. We want to ensure that we are providing qualified services. One way I have of ensuring that is investing in certification. It also addresses the issue of us being a smaller company. Certification puts us on a compatibility scale of what they would expect from a company like Sun.

Q. Have you closed any deals based on your certification?

A. There have been many specific cases. Because we have certification we can represent ourselves as a very high-end solutions provider of enterprise services. It's obvious to the customer when we close the deal that we know what we're talking about.

Q. What is the biggest concern of your customers?

A. How to conduct business in a full electronic-commerce environment. They need to know how to collect employee information from remote locations, accept orders from customers electronically, and allow them to check the status of an order electronically. This involves a distributed business environment focus.

Q. What do you see as the main benefits of using Sun technology to support heterogeneous environments?

A. Sun is the leader in giving the customer—business information systems managers—the ability to have open systems. Java technology is truly designed to run anywhere. That combined with Oracle's Network Computing Architecture allows you to distribute processing anywhere. We can combine these to allow processes to be as efficient as possible.

Q. What are you doing with Java?

A. We're developing applets and integrating that with what we're doing with the Oracle database to provide an applications layer.

VCSI

VISUAL COMPUTING SOLUTIONS, INC
90 Executive Drive
Carmel, Indiana 46032
(317) 814-8274 Home page: www.vcsihome.com

Visual Computing Solutions, Inc., (VCSI) provides solutions in the areas of data warehousing, data mining, systems management and integration, Java development and network computing.

According to VCSI president Richmond Wells, Sun certification has been a boon to his company. "When a customer sees that you have this competency, they recognize the value in that," he says. "I can make a strong case for having those plaques on the wall that say we're certified. It definitely helps sales, and it has allowed us to attract and retain some of the top people out there because they really want to work for us."

VCSI's philosophy is to establish a long-term relationship with the customer, and to achieve that, the company does not charge on front-end consulting. "The customer sees our competency up front, and the value that we add," says Wells. "The sale typically comes to fruition."

A Sun Competency-certified Enterprise Elite reseller, VCSI specializes in the E10000, and is authorized to sell all Sun products and services, from desktop JavaStations to mass storage devices to Enterprise servers.

VCSI has also invested heavily in Java technology. "A high-tech integration firm without a focus on Java would be as silly as GM and Ford not being concerned about the future technology of tires," says Wells. "There's a lot of interest in Java from our customers. Companies are finding that they can significantly minimize software R&D by writing in Java code. Clients have us doing Java development for them now."

INTERVIEW WITH

RICHMOND WELLS
PRESIDENT

Q. *Why is a VAR's certification so important to a potential customer?*

A. It indicates that the VAR and the vendor are committed to each other. It shows we have invested in our people, from a training perspective, to meet customer needs. The customer can feel more comfortable because they know that we know what we're doing.

Q. *And how has certification helped VCSI?*

A. Certification has been a key factor in almost every procurement we're involved in. Recently, we established an account relationship with a public utility. Not a lot of Sun VARs were willing to bid on that project because they knew they didn't have the technical competency required. But we invested a great deal of time doing a proof-of-concept with the customer. Because we had invested that time up front, the customer saw that we were adding serious value to the sale.

Q. *What is the biggest concern of your customers today?*

A. They are looking for technology business partnerships. The overall investment in technology is still expensive, and people costs are not decreasing. Some firms are growing, but they don't justify the cost of support staffs. An entire re-evolution of the architecture—the thin-client architecture—is emerging. Companies need a relationship with a partner that can make that work. We come in to be that partner.

Q. *What's been the biggest change in your business lately?*

A. E-commerce. There's a $200 billion market opening up over the next 18 months. A barrier of that market's growing is trust, meaning that individuals have yet to understand enough about the Internet. Once they have that trust, they'll be doing more and more on the Internet.

THE MARINES. THE GREEN BERETS. THE NAVY SEALS.

It's like Special Forces training for VARs: Sun Competency Certification—a proving ground from which a handful of value-added resellers will graduate. Trained in Sun™ products, consulting and interoperability, as well as the latest Java™ technologies, they're certified in Enterprise, Workgroup and Specialty categories. Sure, there are easier ways to become a reseller. There are also bargain parachutes. The bottom line is that when you see the Sun seal of approval hanging on the wall, your rip cord worries will quickly disappear. Just look for the certification logo, and walk on in. Left, left, left-right-left. THE NETWORK IS THE COMPUTER™

Sun microsystems

NOW LET'S TALK ABOUT A PROGRAM THAT'S TOUGH TO GET INTO.

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Corporate Strategies

Case Studies • Trends • Outsourcing

Briefs

"The average cost of replacing today's defecting workforce is eating away at the profitability of even the healthiest organizations."

— Lynn Voss, president of Integral Training Systems, Inc., a consulting and training firm in Half Moon Bay, Calif.

[illegible] on falling [illegible]

[illegible] are becoming [illegible] spurred on [illegible] information technology projects are being delivered late and over budget, according to an ongoing [illegible] of more than 1,000 companies surveyed by The Hackett Group, a Cleveland-based research firm. [illegible] to the firm's data, [illegible] of major IT projects are [illegible] late and 58% are [illegible] over budget. CIO [illegible] responsibilities are most often taken over by chief [illegible] officers, said Doug Hackett, president of The Hackett Group.

Ready for [illegible]

Last [illegible], Steven Jobs [illegible] began [illegible] to use [illegible] problem in [illegible]. He reported that [illegible] applications [illegible] to meet regulatory compliance by year's end.

Key dates for euro conversion projects

Jan. 1, 1999 Euro becomes a currency, but only in noncash form

Jan. 1, 1999 – Dec. 31, 2001 Both euro and national currencies are valid

Jan. 1, 2002 Introduction of euro bank notes and coins

June 30, 2002 Latest date by which the euro will be the only currency in participating countries

Source: Giga Information Group, Cambridge, Mass.

Give me back my green screen!

▸ *Managers lament user training never stops*

By Barb Cole-Gomolski
SAN FRANCISCO

TRAINING

TO YOU, IT WAS a well-designed application that met the user's requirements and came in on time and perhaps even on budget.

To them, it was yet another in a seemingly endless stream of applications for which end users need training.

Information systems isn't the only department strained by shortened application life cycles, widespread deployment of enterprise resource planning applications and conversions to year 2000-compliant systems, according to corporate training managers gathered here for the American Society for Training & Development conference earlier this month.

"Our biggest challenge is to keep workers trained at the pace that technology is changing," said Deborah Barrett, manager of associate training at Automatic Data Processing, Inc. (ADP) in Hoffman Estates, Ill. Many of ADP's mainframe applications recently were converted to client/server systems. The switch is a big leap for workers "who were expert on the old system but don't know the new application," Barrett said.

Barrett is also charged with training help desk staff to keep track of problems and resolutions. "These people are simply too busy all the time" to be trained, she said.

Adding to the turmoil, IS departments have moved too slowly in implementing browser-based training, said Doug Upchurch, executive director of the Information Technology Training Association trade group in Austin, Texas. As a result, in many companies, the human resources department has had to intervene to make that happen, he said.

Upchurch said IS project managers need to do more than just budget for training as part of an application's rollout. "They need to be talking to the HR people to figure out how they are going to deliver the training," he said.

Training managers said mov-

Training, page 42

LEARNING CURVE

Training managers said these factors can make their jobs difficult:

- **Shortening application life cycles**
- **A host of new applications that replace software that isn't year 2000-compliant**
- **Move from mainframe systems to client/server and Internet-based systems**

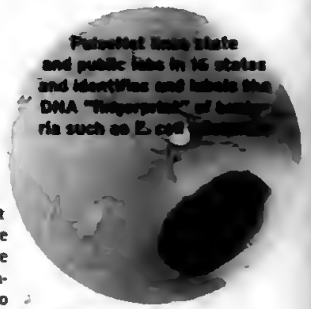
Source: American Society for Training & Development, Arlington, Va.

Network helps combat outbreaks of disease

By Laura DiDio

THE CANADIAN government two weeks ago informed U.S. public health officials that it suspected that a shipment of frozen sausages exported to the U.S. was contaminated. U.S. officials used a brand-new biometric technology that recognizes the "fingerprints" of dangerous bacteria and a network that links health agencies across the country to verify that the sausages were tainted. A nationwide alert was sent out only two days after the warning.

Compare that with the year-long hunt for Mary Mallon, who was dubbed Typhoid Mary after she helped spread the disease to 51 people during the 1904 typhoid epidemic in New York. Three deaths were attributed directly to Mallon, a professional cook.


PulseNet links state and public labs in 16 states and identifies and labels the DNA "fingerprints" of bacteria such as E. coli

About 9,000 people — mainly very young children and the elderly — die each year of food or toxic poisoning, according to statistics from the U.S. Department of Health and Human Services (HHS) in Washington. Officials are optimistic that quick discovery of bacterial infections will result in fewer deaths.

The month-old PulseNet network was designed by HHS and the Centers for Disease Control and Prevention (CDC) in Atlanta to identify and help quash outbreaks of disease. PulseNet, a Unix-based network, links state public health laboratories in 16 states and identifies and labels the DNA fingerprint pattern of bacteria such as E. coli or salmonella. Scientists compare samples of contaminated

Network, page 43

YEAR 2000

Compliance requires collaboration

By Matt Hamblen

TO EASE THE burden of solving year 2000 issues, many companies have wanted to collaborate with competitors on year 2000 fixes. But they have held off for fear that sharing information would draw the guns of antitrust lawyers at the U.S. Department of Justice as well as those of private lawyers.

Without collaboration, industry associations and analysts said they worry that businesses won't get some fixes done in time.

So it's good news to them that the Justice Department is ready to relax its antitrust standards somewhat for information sharing [CW, June 8], industry groups said. But even that doesn't remove all barriers to collaboration.

The Justice Department's antitrust chief told the Year 2000 Council that the antitrust division will issue written advice

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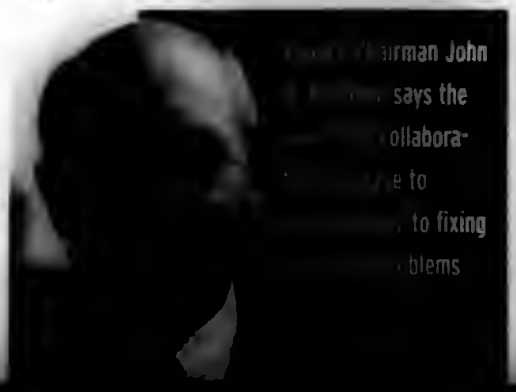


THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION.

Compliance

CONTINUED FROM PAGE 41

called "business advisories" to industry groups that want to work on year 2000 problems together, a Year 2000 Council spokesman said.

The year 2000 collaboration will be allowed but will have to pertain solely to fixing year 2000 problems, said council Chairman John A. Koskinen. Beyond that, companies would need to seek specific advisories, a Justice Department official said.

ADVISORY ON ITS WAY

The Securities Industry Association (SIA) in New York plans to request an advisory soon, according to Justice Department and SIA officials. A Justice official said that once an advisory is issued, it is considered public information applicable to all companies and organizations with similar needs.

"That's a positive move by Justice, and we support it," said John Byrne, senior counsel at the American Bankers Association. "We had been concerned by the antitrust implications of year 2000 work and stand to benefit" from approval.

But the Information Technology Association of America (ITAA) in Arlington, Va., is concerned that the advisories aren't enough protection for antitrust lawsuits brought by other companies, said Mark Uncapher, a vice president at the ITAA.

"Even though the feds might not prosecute for antitrust, there could still be private litigation using the same antitrust statute," Uncapher said. "Obviously, this Justice Department decision helps the process, but legislation is still desirable" to make companies safe in sharing.

For example, if three companies work together and a fourth is left out, that company could file an antitrust lawsuit, he said. Similarly, if 20 financial services companies get together and say a software company's software isn't year 2000-compliant and then withhold their business, it could lead to legal action by the software company.

Spokesmen for several industry associations said they expect legislation to be introduced this summer to remove the antitrust threat for year 2000 collaboration both from Justice Department prosecution and private lawsuits. □

Training hurdle

CONTINUED FROM PAGE 41

ing to new applications has always kept them busy. But the year 2000 crisis is resulting in a wave of applications that seem to be hitting all at once, they said.

TRAINING INDEX

Percentage of training time spent on job specific technical and computer skills	25%
Percentage of all training conducted in an instructor-led classroom:	84%

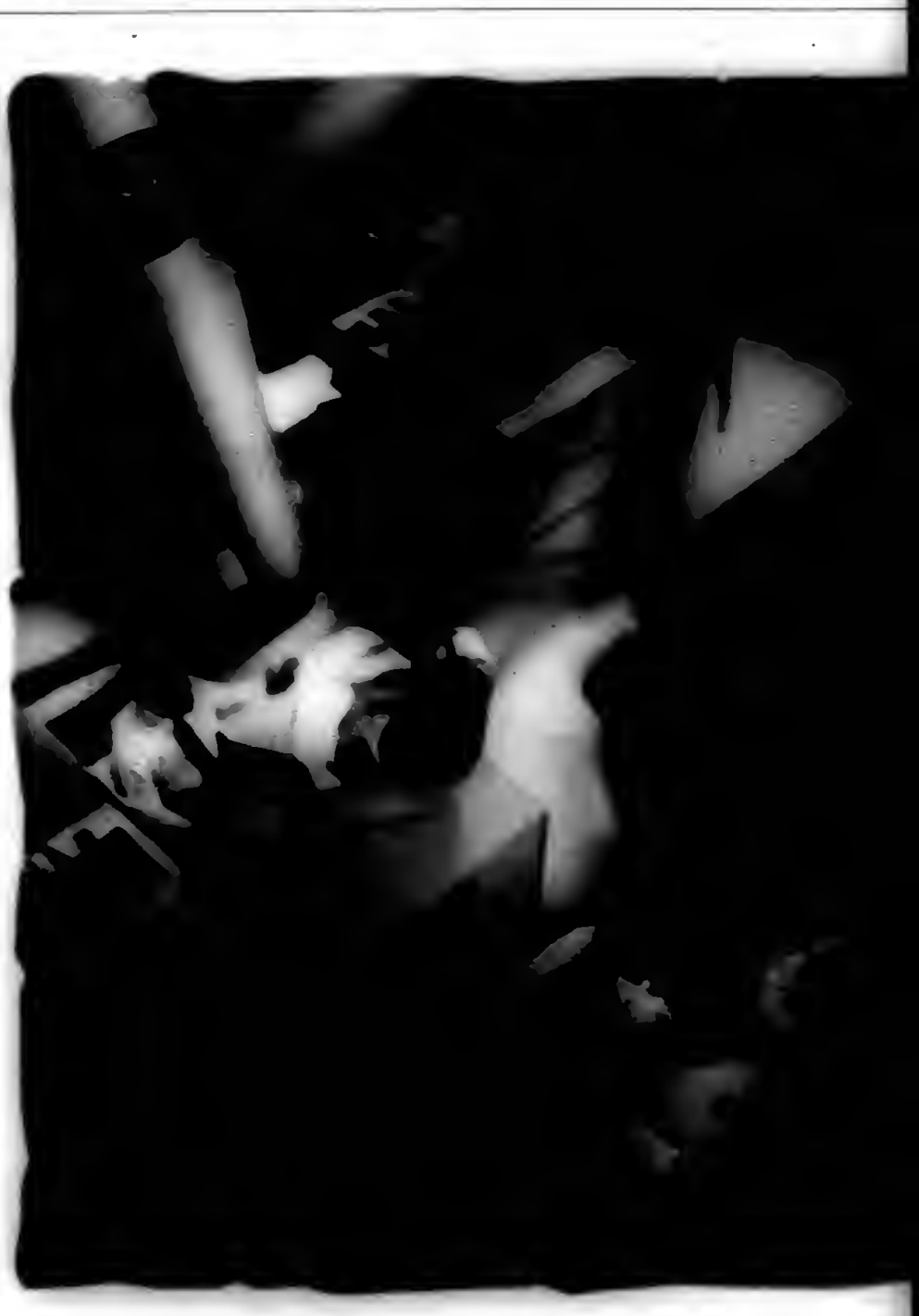
Base: Training managers at 540 large (3,500 or more employees) U.S. companies

Source: American Society for Training & Development, Arlington, Va.

"A lot of these new distributed systems are incredibly complex," said Jerry Stivers, performance systems specialist at United Services Automobile Association, an insurance company in San Antonio. Better communication between trainers and IS can make those projects go more smoothly, he said.

In the absence of such communication, it can be chaos, trainers said. For instance, Bonnie Hillsberg, a training associate at Kimberly-Clark Corp., a diaper maker in Neenah, Wis., is already buddling with IS managers to determine a plan for training workers on Windows 98 this fall. "We will move about 30,000 people [to Windows 98] in one month," Hillsberg said.

Hillsberg is working closely with IS to develop a computer-based training course that will help workers get up to speed on the new operating system. The old way of training people — in the classroom with instructors — won't cut it, she said. □



Network

CONTINUED FROM PAGE 41

food — found in supermarkets and in samples taken from food poisoning victims — with known strains of bacteria in a customized database. The labs use the Internet to disseminate information.

"PulseNet helps public health experts recognize collected samples from outbreaks of foodborne illness, scan them and post results online. This way, they are able to discern if it's the same strain. There may be a single source for the infection, even if the outbreak occurred on opposite sides of the country," said acting CDC Director Dr. Claire Broome. "By matching bacteria subtype patterns, we detect nationwide outbreaks quickly and better direct public health actions."

Gary Lynch, a security analyst at Gartner Group, Inc. in Stamford, Conn., said commercial uses for biometric technology such as PulseNet's are common.

"Businesses could use it to do everything from analyzing the chemical components of drugs for the pharmaceutical industry to authenticating long strings of data," Lynch said.

PulseNet's functions are particularly useful today because food from a single source can reach U.S. tables nationwide, said HHS Secretary Donna Shalala in a prepared statement. For example, last year an outbreak of E. coli occurred in Colorado. FoodNet, a precursor to PulseNet, let officials at the CDC and the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) trace the outbreak to a shipment of frozen hamburger patties from Hudson Foods, Inc.

"We were able to identify Hudson Foods' hamburger patties as the source of the E. coli outbreak by using the network to match the DNA in one of their unopened packages with one of the frozen patties obtained from one victim's freezer. It took us a week to 10 days to track it down," said Jackque Knight, an FSIS communications specialist in Washington.

Health and Human Services Secretary Donna Shalala says PulseNet is useful because food from a single source can reach U.S. tables nationwide

PulseNet is an extension of the FoodNet network, but it includes more sources, links to more states and the ability to identify a wider variety of bacteria and toxins. David Gaigle, a certified poison control specialist at the Massachusetts Poison Control Board in Boston, said he was "floored by the possibilities." Massachusetts, which handles more than 600,000 cases of poison- and food-related illnesses, is one of 16 states that can access PulseNet.

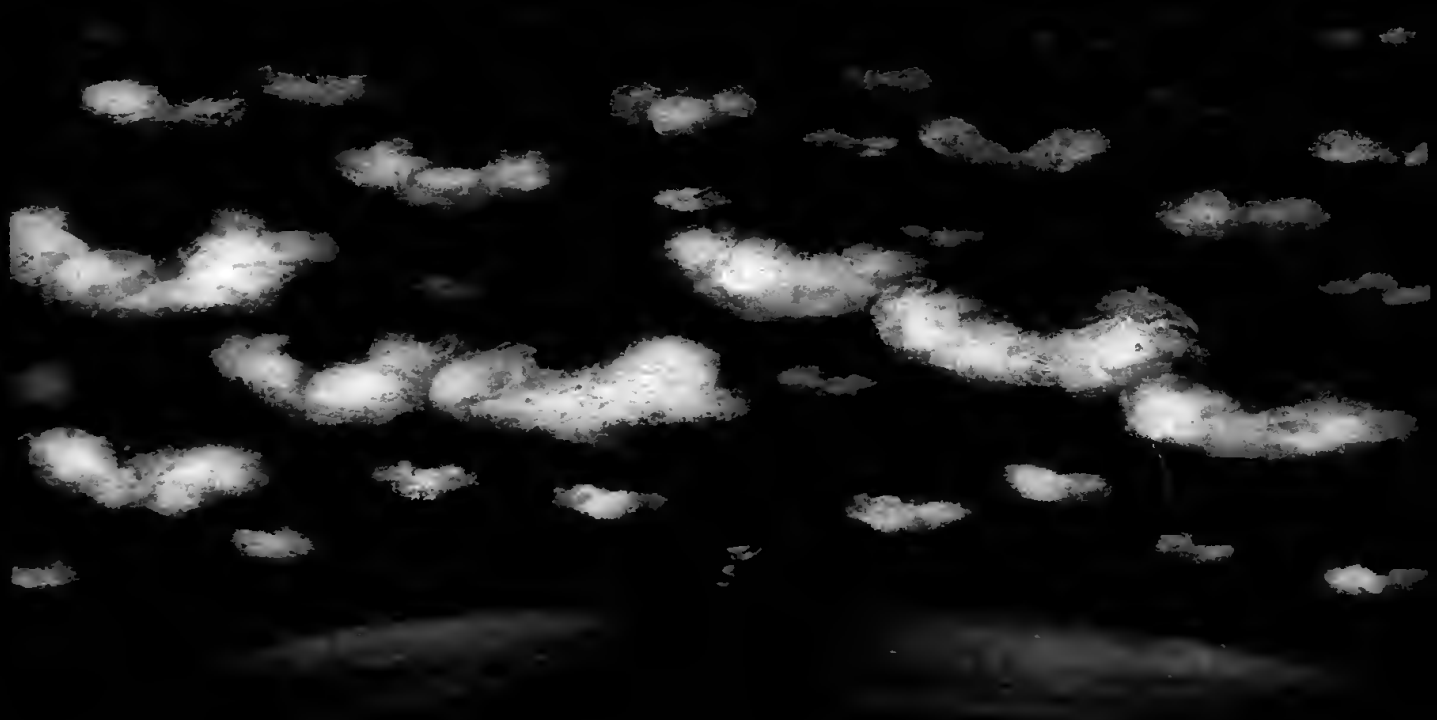
"We're sometimes the last to know about contaminations and outbreaks," Gaigle said. "It will be nice to have PulseNet do the definitive legwork for us and let us concentrate on getting the cure to people." □

ENEMY FIRE
WARRING FACTIONS
THE OCCASIONAL
AMBUSH
Raytheon
Wireless

SHORT

Year 2000 manual

Prentice Hall PTR in Upper Saddle River, N.J., has published a how-to book on dealing with the millennium bug. The $39 book, *Year 2000: Best Practices for Y2K Millennium Computing*, was written by Dick Lefkon. It contains management and legal advice from organizations that have been proactive in dealing with the year 2000 date-change problem.



Nasda needed the world's largest internet MCI gave it ten.

local • global • • internet • paging
cellular • integrated messaging
call center services • conferencing

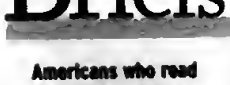
MCI

Internet Commerce

Electronic Commerce • The World Wide Web • Intranets

Briefs

Americans who read news online at least once per week



Base: Telephone survey of 3,002 adults; margin of error +/- 3%

Source: The Pew Research Center (www.people-press.org), Washington

Yahoo makes buy

Yahoo, Inc. in Santa Clara, Calif., has agreed to purchase electronic-commerce software company Viaweb, Inc. in Cambridge, Mass., for 455,000 shares of Yahoo stock worth about $30 million. The move is part of Yahoo's push to provide more online retailing services to small and midsize companies. Yahoo stock rose $4.56 per share to close at $109.56 on the day of the announcement.

Seal of approval

Secure Electronic Transaction LLC (SET) has awarded its first authorizations to use the SET trademark. Software from GlobeSet, Inc. in Austin, Texas; Spyrus/Terisa Systems in San Jose, Calif.; Trintech in Campbell, Calif.; and VeriFone, Inc. in Santa Clara, Calif., successfully completed SET compliance tests for wallet software, which consumers would use for SET purchases on the World Wide Web. SET is an emerging protocol aimed at making Internet purchases more secure.

Advertising partners

Internet advertising companies DoubleClick, Inc. in New York and AdKnowledge in Palo Alto, Calif., have announced a partnership to make it easier for companies to advertise on the Internet. AdKnowledge will target ad agencies and other companies that buy advertisements. DoubleClick will provide products to companies that sell Web ads on their sites. Financial details weren't disclosed.

Users build, don't buy, online

▸ *Some are considering pricey E-commerce apps*

By Carol Sliwa

NETSCAPE COMMUNICATIONS CORP. may be making a major push into the electronic-commerce space, but corporate customers have been slow to latch on to some of the new elements of its suite of products, analysts said.

The Mountain View, Calif., software maker earlier this month announced limited availability of the betas of Version 2.0 of two pieces of its five-piece CommerceXpert suite: SellerXpert (for business-to-business selling) and MerchantXpert (for business-to-consumer selling).

Although most Internet pioneers built their own systems, packaged applications now have solid features.

Cyrus Khoshnevisan, engineering manager at Net Contents, Inc. in Palo Alto, Calif., said there weren't any packaged applications available when his company built the Virtual Vineyards World Wide Web site three years ago.

"Now it seems like there are some, so we are starting to look at packaged applications for various functionality for our site," Khoshnevisan said. "We're going to make the classic make vs. buy decision on every piece."

But some products aren't cheap — pricing for Netscape's SellerXpert starts at $195,000 and MerchantXpert costs $150,000 — and analysts said

Users build, page 46

ONLINE BUSINESS

Group proposes standards for E-commerce

By Alan Alper

CREATING AN electronic-business lingua franca for the IT supply chain? That's a tall order — but one that Rosettanet, a recently formed global consortium in Santa Ana, Calif., is taking on.

Rosettanet is undertaking the arduous task of creating common business interfaces, including rules for content and transactions, and a vocabulary for companies that want to buy and sell information technology-related gear.

The self-funded, not-for-profit entity was quietly launched earlier this year by IT industry players interested in achieving greater electronic-commerce efficiencies and lower operating costs, said Fadi Chehade, who is a co-founder and CEO of the consortium.

"The goal is to create a new [electronic-commerce] field," said Chehade, who is on loan

E-commerce standards, page 46

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Investing magazine tries the 'net

CAROL LEE

***Individual Investor* magazine's Mitchell Scherr (left) and Jonathan Steinberg, CEO of the magazine's parent company, realize the site could usurp the print product**

▸ Individual Investor *site has specialty content*

By Sharon Machlis

AS THE POPULARITY of financial information on the Internet began rocketing last year, *Individual Investor* magazine launched a World Wide Web site in May of that year aimed at providing both "commodity" information such as stock quotes and portfolios and specialty content such as daily stock picks.

It seemed a natural complement, said Jonathan Steinberg, chairman and CEO of Individual Investor Group, Inc., which publishes both *Individual Investor* and *Ticker* magazines. Surveys showed that the average reader of *Individual Investor* magazine spends 15 hours per week doing investment research — much of that online.

"We are very cognizant of the threat that it could cannibalize the print [magazine]," he said. "We've made the commitment to eat our own lunch."

For now, the Web site is substantially different from the magazine, aiming to provide more timely investing information. The site offers current opinions from the magazine's analysts and various ways to track hot Wall Street news — insider trading reports, stocks that have recently beat earnings estimates, stocks with major price movement and so on. There are also links to news reports and Securities and Exchange Commission filings by company name.

In addition, the Web site closely tracks the print magazine's annual "Magic 25" stock portfolio picks and advises when might be a good time to buy or sell the securities. Steinberg said the Magic 25 has had a 27% annual return over its six years, vs. 17% for the well-known Standard & Poor's 500 index.

The Web site lost about $800,000 in its first year of operation and is expected to lose another $1 million or more

Investing magazine, page 46

World Wide Wait

The average time, in seconds, to download a home page from one of 40 business-related Web sites during business hours for the week of June 1, 1998.

Top 5 best-performing Web sites	
AltaVista	9.15
UUnet	10.68
Oracle	10.76
Novell	11.52
Charles Schwab	11.98

Best areas to Web surf	
Milwaukee	10.02
Denver	11.35
Seattle	12.62
Worst areas to Web surf	
Salt Lake City	40.04
Miami	28.75
San Diego	27.62

Source: Keynote Systems, Inc., San Mateo, Calif.

Users build, don't buy

CONTINUED FROM PAGE 45

they don't expect broad adoption until after the year 2000.

"We're definitely seeing a focus away from spending this kind of money and solving the year 2000 problem," said Heather Ashton, an analyst at Hurwitz Group, Inc. in Framingham, Mass. "We're predicting as soon as we hit 2000, a lot of the IT budgets will free up to be able to afford these types of solutions."

ELECTRONIC COMMERCE

Research on Internet-based commerce transactions seems to support that time frame.

A survey of 112 information technology decision-makers that was conducted by Zona Research, Inc. in Redwood City, Calif., and published earlier this year showed that only 10% of those decision-makers' companies now conduct Internet-based sales transactions, but 44% said they were likely to do so within two years.

Savings can be enormous once the systems are up and running because companies can scrap paper-based, employee-intensive systems, analysts said.

But installing electronic-commerce applications is no walk in the park, and that slows adoption.

For some companies, packaged applications may never be a good option. Fort Worth, Texas-based Sabre Group is considered a technology leader in the travel field, running the widely used airline reservation system and Travelocity Web site, which lets consumers book travel reservations and track millions of continually changing airfares.

But Sabre hasn't looked into packaged electronic-commerce applications because of the complexity of the online application and the need for legacy connectivity.

"If you can think of the permutations and combinations, it's quite a big database that we have to tap in to," said Barry Vandevier, a senior consultant at the AMR Corp. subsidiary.

Sabre, however, does use Netscape's Enterprise Server and Commerce Server products for its Web site.

NETSCAPE'S EXPECTATIONS

A spokeswoman for Netscape didn't deny that, so far, many companies are building their own electronic-commerce applications.

"What we expect is when they see the functionality of these products, they're going to realize that, overall, it's less expensive to deploy packaged applications, and they'll get to market faster," the spokeswoman said.

Netscape faces competition from a variety of companies in each of the five different areas of its CommerceXpert Suite.

For instance, IBM, BroadVision, Inc. and Open Market, Inc. make products that compete with Netscape's MerchantXpert. Competitors to Netscape's BuyerXpert includes Ariba Technologies, Inc., Commerce One, Inc. and Elekom Corp.

What's new in Netscape's . . .

MerchantXpert 2.0

- Personalization features that allow one-to-one marketing
- Component-based architecture
- Catalog tools that ease searching
- Support for advanced discounting, specials and promotions

SellerXpert 2.0

- Supports Open Buying on the Internet protocol
- HTML front end
- Improved customization capabilities
- Customer service features such as order tracking, stock availability checks, repeat orders and fast catalog searching
- Simple Network Management Protocol support for centralized management

The competition doesn't doom Netscape — which lost money from October through January but broke even from February through April — but the ability to wait out the millennium date change is key.

"I'm confident Netscape will eventually be able to pull it off as an important commerce software provider," said Vernon Keenan, an analyst at Zona Research. "But you're going to need longevity to order to be successful." □

E-commerce standards

CONTINUED FROM PAGE 45

from Ingram Micro, Inc., where he oversaw the creation and development of that company's electronic-commerce extranet. "To do that you need rules."

Rosettanet is named after the Rosetta stone, which archeologists used to first decipher hieroglyphics and which now signifies something that gives a clue to understanding.

On the electronic-commerce front, creating standard lingo would allow suppliers to consistently name product parts and define transaction processes, while enabling the supply-chain equivalent of "build-to-order" procurement. It would also allow buyers to make purchases across universal catalogs, spanning a multiplicity of suppliers and products, Chehade said. Different manufacturers often use their own parts numbers, while customers rely on yet another set.

MEASUREMENT TOOLS

But perhaps most important for suppliers, Rosettanet would create a singular way to measure electronic commerce's business benefits, as auditors would use a consistent form to generate cost/benefit reports, Chehade said.

Would such an approach level the playing field to a degree that would lead to further IT commoditization? "Companies can still compete on game tactics," Chehade said, "but not the size of the ball."

That is true, but consortiaware has rarely, if ever, solved IT industry disputes. In fact, consortia usually create have and have-not fissures. De facto standards have reigned supreme for companies that have wielded tight account control (IBM, for instance) and are usually propped up by heavy-handed marketing initiatives.

Rosettanet appears different. It has gained momentum from the Global Technology Distribution Council, a group of 12 companies responsible for $100 billion-plus in IT revenue. It also has garnered the support of a broad array of IT suppliers and large customers, and it has the backing of several industry groups and technical standards associations.

"Consortiaware is generally perceived by many as a nonstarter, but in this case the critical difference is they're building a business consensus and then encoding a solution," said Chris Stevens, an analyst at Aberdeen Group, Inc. in Boston. "Technology is secondary."

Already, Rosettanet has finished its first four projects: catalog information, which defines the nouns and verbs used in data fields representing a general product; software technical specifications; memory; and laptop technical specifications. Rosettanet's board is expected to vote on those projects later this month if the group's members approve them.

Rosettanet has raised more than $700,000 from participating organizations.

The 28 members that each kicked in $20,000 include American Express Co., Compaq Computer Corp., Deutsche Financial Services, Federal Express Corp. and Ingram Micro.

Partners that contributed $10,000 each include Ariba Technologies, Inc., Bay Networks, Inc., The Dun & Bradstreet Corp. and Novell, Inc. □

Investing magazine tries 'net

CONTINUED FROM PAGE 45

in its second. But Steinberg plans for it to move into the black by the fourth quarter of next year as advertising revenue grows. Officials also are pondering instituting a small registration fee of perhaps $2.95 per month sometime down the road.

The New York-based company is trying to build site traffic by partnering with other sites, a typical move with one notable exception: *Individual Investor* doesn't want to pay for exposure and links on other sites.

Instead, it offers its content, which includes hot stock picks and its own analysts' opinions, in exchange for exposure and links to its own site from other sites. No money changes hands, Steinberg said.

Its content appears on America Online, Inc.'s Digital City New York and its investment specialists host chats on Yahoo.

The company also provides information on Hoover's Online (*www.hoovers.com*) and Cox Interactive Media (*www.cimedia.com*), among others.

"Seventy percent of our deals are on the home page of the partner site" so links to *Individual Investor* show up on the partner's opening page, said Mitchell Scherr, director of Internet services at *Individual Investor*.

Numerous other financial publications offer investment advice online. They include *Investor's Business Daily* (*www.investor.com*) and *SmartMoney Interactive* (*www.smartmoney.com*). In addition, there are several Web-only sites such as Motley Fool.

But the proliferation of such sites has been accompanied by an explosion in consumer interest in Internet-based news.

The Pew Research Center in Washington reported last week that one-fifth of all Americans went online regularly for news last year, up from 6% in 1996. And financial news was one of the most popular topics.

So far, the *Individual Investor Online* Web site has about 90,000 registered users (the print publication has a half-million subscribers).

Cox, which has about 30 regional Web sites, rolled out *Individual Investor* content first on Access Arizona (*www.accessarizona.com*). A large number of retirees who are interested in tracking their investments use the Arizona site, said H. Lewis, business development manager at Cox Interactive Media in Atlanta.

"It appears to be very well-received," he said.

For his own company, Steinberg said he believes that the Web is a wise investment. "The magazine business is slow-growing," he said. "On the Web, a deal with Yahoo, you have that chance. . . . You can catch lightning." □

MORE ONLINE

For links to information about online investing, stock quotes, market information and other finance topics, visit *Computerworld* online.
www.computerworld.com/more

NEW PRODUCTS

INQUISIT, INC. has announced Enterprise Inquisit, an agent-based news filtering service that can link with corporate intranets.

According to the San Francisco company, the service monitors hundreds of worldwide news sources, including wire services and newspapers, and delivers articles that match user-specific criteria on user-defined schedules. To aid companies that struggle with bandwidth-hogging desktop direct services, Inquisit agents and news feeds are all hosted at Inquisit. Pricing starts at $100 per user, per year for a 500-user license.

Inquisit
(415) 659-9101
www.inquisit.com

ATREVE SOFTWARE, INC. has introduced WebSpective Release 2, software for World Wide Web operations management.

According to the Cambridge, Mass., company, the software addresses six areas of Web management: traffic, content distribution, crisis intervention, performance monitoring, data collection and centralized administration.

The Content Manager distributes content updates across multiple live Web servers; the Traffic Manager balances loads; the Crisis Manager restarts failed servers; and the SiteStats Manager centralizes statistics in a relational database.

It costs $15,000 per server.

Atreve Software
(617) 588-3400
www.atreve.com

ELEMENTAL SOFTWARE has announced Drumbeat 2.0, World Wide Web site development software for people who aren't programmers.

According to the Carlsbad, Calif., company, the software lets users connect Web pages to Open Database Connectivity-accessible databases without any coding. Connected pages can then synchronize with or search databases on the fly. To add dynamic page interactions such as transitions or fly-ins, users select effects from pop-up lists, and the client-side Hypertext Markup Language or JavaScript is generated automatically. The price is $699 per user.

Elemental Software
(760) 931-7171
www.drumbeat.com.

WAVECREST COMPUTING, INC. has announced ProxyReporter Version 3.0, software for creating detailed reports of employee Internet usage.

According to the Melbourne, Fla., company, and authorized user can connect to an query multiple servers and produce color-coded graphical reports one at a time or on an automatic scheduled basis. The software also can block access to more than 200,000 World Wide Web, news and file transfer protocol sites in 29 categories. Supported operating systems include Windows NT, Solaris from Sun Microsystems, Inc. and HP-UX from Hewlett-Packard Co.

Pricing starts at $1,845 for a 50-user license.

Wavecrest Computing
(407) 953-5351
www.wavecrestcomputing.com

THE ELECTRIC MAIL CO. has announced Electric InterConnect, a service that connects LAN-based E-mail systems such as Microsoft Corp.'s Microsoft Mail to the Internet.

According to the Vancouver, British Columbia, company, the service allows companies with multiple locations to create a private E-mail WAN using the Internet. It was designed as an alternative to purchasing a Simple Mail Transfer Protocol gateway and works at the customer site by queuing messages and managing the modem or dedicated connection to the Electric Mail distribution hub. Pricing starts at $150 per month for 50 users.

Electric Mail
(604) 482-1111
www.electric.net

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COMPUTERWORLD

Briefs

HOLDING UP?

Has your firewall been compromised in the past year?

Base: 413 corporate information security managers, data security officers and senior systems analysts; margin of error +/- 4%

Source: Computer Security Institute, San Francisco; Zona Research, Inc., Redwood City, Calif.

Distributed service

Aprisma Corp. in Sunnyvale, Calif., last week introduced software that can monitor user activity at remote offices to monitor application performance across networks. EnView tries to warn control operators about unavailable applications, slow end-to-end response times and network congestion. Bell Atlantic Corp. originally developed the software and sold it to Aprisma as Spectrum. It is available now. Pricing varies by configuration.

Compaq, BMC team

Compaq Computer Corp. and BMC Software, Inc., both in Houston, recently announced plans to integrate tools for managing servers based on Windows NT. Insight Manager software designed for Compaq servers will be enhanced with BMC's Patrol software for Windows NT. No time frame was announced.

SECURITY BREACH

More than 50% of 250 large corporations have experienced 30 or more system security breaches* in the past 12 months. Nearly 60% said they lost $200,000 or more in network downtime, recovery time, lost data and productivity as a result of each intrusion.

* Includes security holes in operating system, network operating system or application software or flaws in the network or TCP/IP protocol

Custom tools pose problems

▸ Some tailoring will always be needed, but undocumented fixes cause trouble later

By Patrick Dryden

IS SPECIALISTS can't escape the role of programmer, despite edicts that they manage their networks, systems or applications with available tools instead of homegrown software.

These information systems specialists must write scripts, rules and policies that adapt management products to their particular needs. And some still solve pressing problems through custom code despite the trend toward off-the-shelf products.

Payback may be immediate and dramatic. But consultants and analysts warn that customization can backfire without proper documentation.

NO DOCUMENTATION

"Everyone has custom tools and scripts, but the problem is that they are all developed by gurus, and gurus leave the company," said Jonathan Eunice an analyst and IS advisor at Illuminata, Inc. in Nashua, N.H. "They can sling together something of beauty, yet almost never document their code to any level of professional standards."

The do-it-yourself approach "used to be considered macho, but IS organizations now appreciate more strategic solutions," such as suites of integrated tools from a limited number of vendors to keep support costs low, said Kathrin Winkler, a senior consultant at Renaissance Worldwide, Inc., a network consultancy in Newton, Mass.

At J. P. Morgan & Co. in New York, for example, IS managers hope to replace hundreds of separate tools —

Custom tool, page 54

Users don't want total control

▸ IS shies away from linking building systems, data network

By Bob Wallace

IS IT A GOOD IDEA to tie the systems that control a building's security, environmental and other automated systems to a corporate data network?

Two weeks ago, start-up Coactive Networks in Sausalito, Calif., announced a plan to do just that. So did networking kingpin Cisco Systems, Inc., which is working on the system with Echeleon Corp. in Palo Alto, Calif.

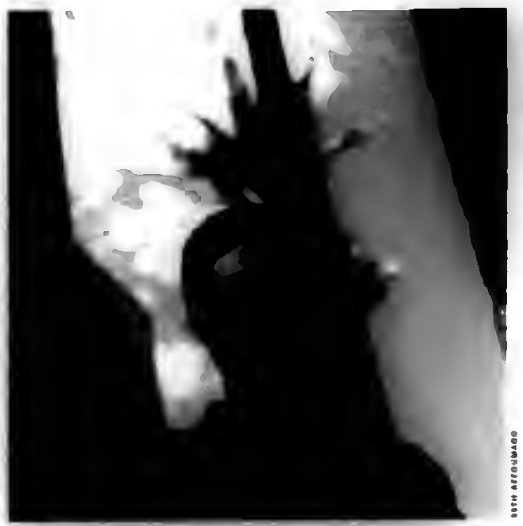
The vendors claim that users can save money by running one all-inclusive, buildingwide network.

"By integrating information from various subsystems, such as air conditioning, heating and security, users can save energy and achieve other operational savings," said David Gaw, CEO at Coactive.

The company makes special routers that deliver data from security, building automation and control systems to corporate data networks. The Cisco-Echelon team hasn't yet announced devices to enable the linkage.

But users see shortcomings, not advantages.

"I'm not at all sold on this idea because the liabilities would outweigh any benefits," said Edwin Leard, general manager of information systems at Yamaha Corp. of America in Buena Park, Calif.



Val-Pak's Alan Robson: "I just don't see the business benefit here, so I'm definitely not on the bandwagon"

"When I'd take the network or servers down for preventative maintenance, I'd lose my security system, too. I feel more comfortable with these systems being run and managed separately," he said.

NOT BUYING IT

"It sounds like a marketing pitch and little more," said Mark Maxwell, vice president and global systems manager at Fuji Capital Markets Corp. "It may be standard practice five years from now, but today, the advantages are not clear and it would be too expensive to retrofit systems to be connected to the data network."

Alan Robson, director of network systems at coupon giant Val-Pak Direct Marketing Systems, Inc. in Largo, Fla., said he would go along if his business managers demanded the connection between networks.

"[But] I just don't see the business benefit here, so I'm

Linking buildings, page 53

CLIENT/SERVER

HP takes aim at service management

The market for network and systems management software should reach about $14 billion this year, according to Business Research Group in Newton, Mass. Information systems managers want those tools to work together efficiently so they can control the cost of maintaining complex client/server environments and the performance of distributed applications.

Fighting to lead this market are Computer Associates International, Inc. and IBM's management software arm, Tivoli Systems, Inc.

Where is Hewlett-Packard Co. in this battle? Olivier Helleboid, general manager of HP's OpenView management software division, explained HP's strategy to Computerworld senior editor Patrick Dryden at the OpenView Forum International '98 user conference in Seattle.

CW: The name OpenView still signifies network management software to most IS managers, not a family of products for also managing systems and applications. Are you building on OpenView Network Node Manager's reputation as the leading network management console or emphasizing other OpenView products?

HP, page 53

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HP aims at service management

CONTINUED FROM PAGE 49

HP's Olivier Helleboid

HELLEBOID: We're still reinforcing Network Node Manager's strength, adding event correlation, a data warehouse and service-level reporting. But it delivers less than 25% of management software revenue and focuses only on solving network problems. When IS wants to manage everything from end to end through one console, [it buys] IT/Operations [integrated systems and network management] with PerfView and MeasureWare [performance monitors].

CW: Are you pushing Network Node Manager users to deal with broader service-level management issues?

HELLEBOID: Yes. This conference doesn't just talk about products, but addresses changing roles in the IS organization — how to connect to the business needs. That's the value we want to give our customers. Many sessions here cover the next release of Network Node Manager.

My role is to project where we're going overall with the entire OpenView product line.

CW: So are you trying to differentiate HP from CA and Tivoli by emphasizing service management?

HELLEBOID: Yes. We're taking a top-down approach to drive service management through OpenView options in a step-by-step basis. For example, we've integrated service- level management capabilities in IT/Operations, MeasureWare and Network Node Manager.

We are previewing a new capability here for IT/ Operations, tentatively called Service Navigation View, which provides an abstract representation of management data per business services. We're not just describing the future, but managing service now.□

Linking buildings, networks

CONTINUED FROM PAGE 49

definitely not on the bandwagon," he said. "I'm not telling people they should do this."

And companies that try to connect networks may incur educational costs for some of their staff.

BASIC TRAINING

"Technical support workers will need to know at least the basics of facilities management in case problems arise," Maxwell said.

Users who have spent most of their time in information systems tinkering with servers or writing code may not have any formal training or education in building management issues, he added.

Ken Cieszynski, a senior staff engineer at United Airlines, Inc. in Elk Grove Village, Ill., said he is cautious about the risks and bandwidth requirements of facilities linked to corporate networks. But he said there may be at least one benefit.

"Rather than running new cabling to support a new security system, we could tie it to our data network, " he said. "Putting in new wiring in airports with asbestos can be tough."□

NEW PRODUCTS

PROXIM, INC. has announced the Symphony wireless family: an ISA card, a PC Card and a modem.

According to the Mountain View, Calif., company, the peer-to-peer wireless products let users maintain network access at distances up to 150 feet. They were designed for wireless file sharing, peripherals or single Internet service provider accounts. The cards offer networking at a 1.6 M bit/sec. data rate, and the cordless modem delivers 56K bit/sec. connections through existing telephone infrastructures.

Pricing is $149 for the Symphony ISA Card, $199 for the Symphony PC Card and $299 for the Symphony Cordless Modem.

Proxim
(650) 960-1630
www.proxim.com

LANQUEST has announced NetClarity Network Checker and NetClarity Remote Analyzer Probe, tools for network troubleshooting.

According to the Fremont, Calif., company, the tools have World Wide Web-based management and can capture traffic on up to 50 remote network segments. Network Checker checks any LAN, WAN or Internet connection for delays, response times and broken links. The Remote Analyzer Probe handles protocol analysis via up to 50 agents that capture traffic on their individual segments.

Network Checker costs $99, and Remote Analyzer Probe costs $995.

LANQuest
(510) 354-0940
www.lanquest.com

ADAPTEC, INC. has announced four new DuraLAN Fast Ethernet network interface cards for Windows NT or NetWare servers.

According to the Milpitas, Calif., company, ports on the cards can automatically self-configure for either 10M bit/sec. or 100M bit/sec. and either half- or full-duplex transmissions.

The ANA-69011/TX costs $85; the ANA-62011/TX costs $99; the ANA-62022 costs $395; and the ANA-62044 costs $695.

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www.adaptec.com

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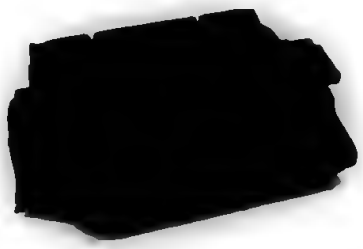

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Custom tool problems

CONTINUED FROM PAGE 49

homegrown and off-the-shelf — mostly with the Unicenter suite from Computer Associates International, Inc. The goal is to raise efficiency and lower maintenance, said Bill Oris, a vice president of IS at the financial services firm.

Homegrown tools, freeware from Internet sources and entry-level products may not scale to meet the needs of large and complex organizations without lots of effort, Winkler said.

Yet even strategic products and enterprise-level platforms demand customization before they pay off.

For example, PageNet, Inc. was able to slash the number of monthly backup failures from 200 to 19 in March and free a central operator from baby-sitting backups by using fairly simple automation, said Clark Carradine, lead systems engineer at the Dallas-based messaging service.

Users designated to change backup tapes in their local servers at 60 remote sites frequently forgot to change the tapes before nightly backups, Carradine said. Now scripts coordinate the Unix systems, backup software from Legato Systems, Inc. and the central management console from Tivoli Systems, Inc. The scripts automatically check for the proper tape and send warnings via electronic mail to the local tape jockey and the site's manager to ensure success, Carradine said.

"IS managers will never steer the staff completely away from customizing management software," Winkler said. For protection, users should make sure every tool and script is well documented so it can be maintained, she said.

Such a tool or script may be beautiful to behold and invaluable to daily operations, Eunice said, "but when it stops working with the new version of an operating system or database, you're back to programming." □

Situation
IS gurus write homegrown management tools or customize platforms with scripts but fail to document the software properly.

Problem
Maintenance is difficult when the guru leaves or the environment changes.

Solution
Stick to vendor-supported tools and make sure custom scripts, integration steps and adaptations are well documented.

Global Innovators

COMPUTERWORLD

MOREONLINE

For resource links on service-level agreements, visit Computerworld online.
www.computerworld.com/more

NEW PRODUCTS

NETWORK ASSOCIATES, INC. has announced Zero Administration Client (ZAC) 2000, software for year 2000 problem diagnosis in networked hardware and software.

According to the Santa Clara, Calif., company, ZAC 2000 automates the audit of networked workstations and provides a consolidated summary report of year 2000 problems resident on the network. Built-in knowledge of how more than 4,000 software programs are affected by date dependencies helps the software make recommendations for resolving problems in large, distributed environments.

ZAC 2000 costs $50 per node for more than 1,000 nodes.

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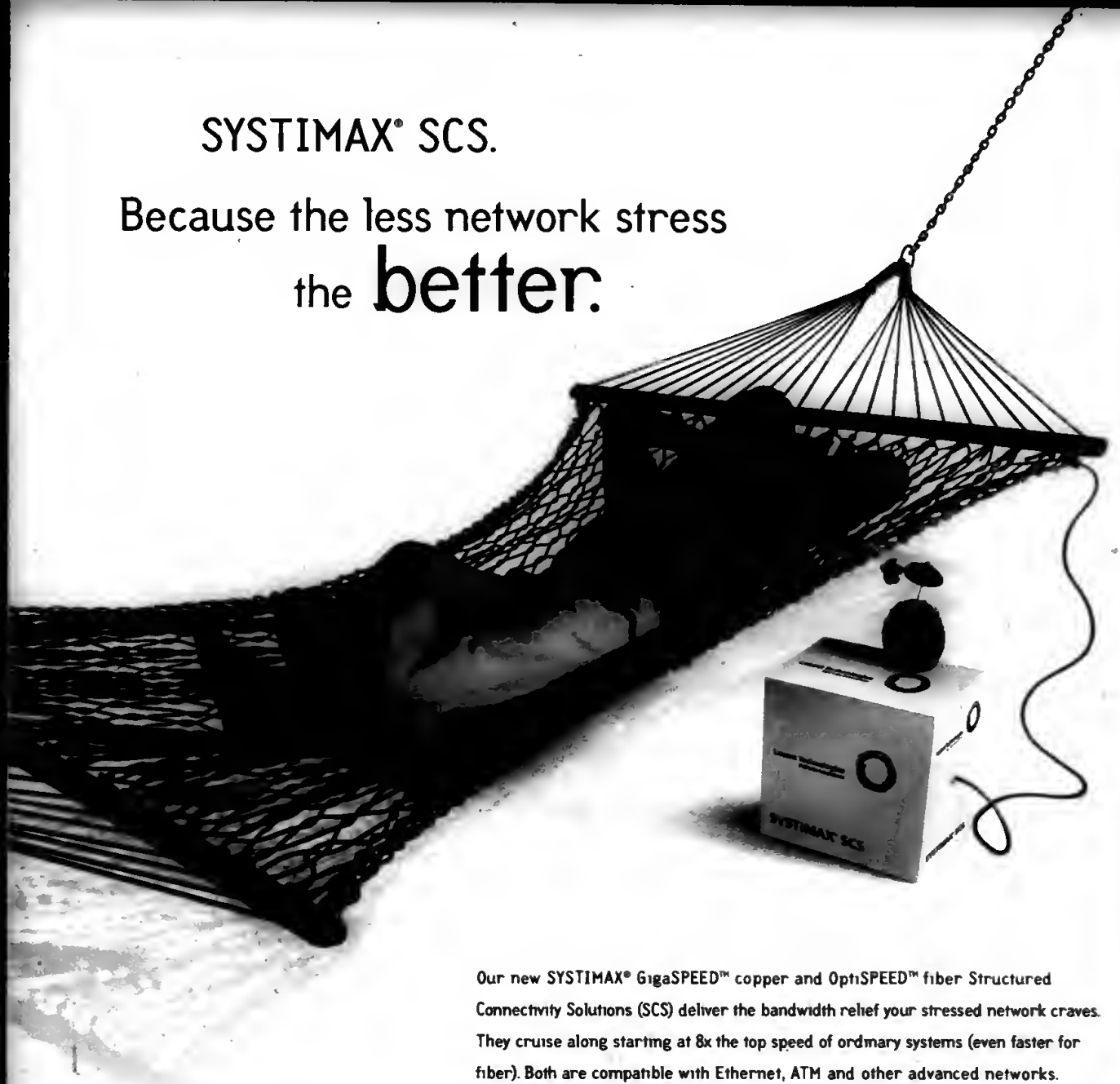

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"Our customers were on the Web. Our data was on the mainframe. Our solution was WebFocus."

"In less than two months, we reduced order status calls by 40%, and drove new customers to our Web site."

Dan Bond
Data Warehouse Manager
Paradyne Corporation

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Briefs

[illegible]

[illegible] vendors [illegible] been on the prowl for [illegible] PeopleSoft, Inc. [illegible] agreed to buy Integrid Systems, Inc., an Alameda, Calif., maker of retail [illegible] software, in a stock swap valued at $80 million. Pleasanton, Calif.-based PeopleSoft previously held a minority stake in [illegible], which this month plans to announce Unix and Windows NT versions of its software.

Meanwhile, SAP AG [illegible] bought a majority interest in Ofek-tech Software Industries Ltd., an Israeli developer of logistics management software for warehouses and distribution centers.

Informix giveaway

Informix Corp. is trying to shed its also-ran status in the Windows NT database market by giving the software away. The Menlo Park, Calif., company said NT application vendors can get free development licenses for its Dynamic Server database from now through year's end. Vendors can also get up to 50 free deployment licenses for each user who buys Informix-based applications. The giveaway is part of a beefed-up incentive program aimed at NT resellers and software vendors (CW, May 11).

RANK ORDER

1997 worldwide enterprise application software market by revenue

SAP	15.6%
PeopleSoft	4.9%
Oracle	4.8%
Computer Associates	3.0%
Baan	3.0%
J. D. Edwards	2.2%
Others	66.5%

Total revenue: $14.4B

Includes license and maintenance revenue on all hardware platforms; research based on vendor interviews and financial statements

Source: International Data Corp., Framingham, Mass.

Users have questions for R/3

GATX Capital's Michael Cromar says SAP's warehousing software should open up R/3 to more executives and business analysts

▶ *Customers hope new SAP software will make data analysis less thorny*

By Craig Stedman

SAP AG's upcoming data warehousing software has been tested by only 20 R/3 users so far, and even they are waiting for a first look at some key pieces of the product.

But that isn't stopping other users of SAP's applications from counting on the warehousing software to be the answer to their vexing R/3 data analysis problems.

For example, Brother Industries Ltd. currently has to collect data from multiple R/3 installations and manually load it in to spreadsheets that are sent via E-mail to analysis-minded executives.

The software is supposed to give R/3 users a more palatable warehousing method than the two choices they have now

That is a time-chomping process that can break down if employees worldwide don't do their part in preparing the data, said Sam Cox, chief information officer at Brother's U.S. unit in Bartlett, Tenn. "Right now, we're hosed," he said. "This is literally going to be our savior."

If it works as promised, SAP's Business Information Warehouse should automatically consolidate Brother's financial and manufacturing data

SAP warehouse, page 60

Needed: Faster upgrades for euro, users say

By Thomas Hoffman

LET'S GO, EURO.

Proactive project managers charged with readying their systems for the arrival of the common European currency are pushing their packaged application vendors to get their systems ready for testing.

The problem customers face is that some vendors, such as SAP AG, are suggesting a plan that would require companies to shut down their production systems for several days to install euro-ready replacement software. That will be challenging for many users, however.

Hoechst Group AG, an SAP customer, "cannot stop production for more than four days," said Felix Lauscher, Economic

Upgrades for euro, page 62

Sales force phones instead of typing

By Kim Girard

FORGET LUGGING laptops — Du Pont Tyvek's salespeople are turning to Ma Bell to process daily customer reports from the field.

Until the company adopted its new system, Du Pont Tyvek's sales force spent up to 15% of its time typing reports and entering customer information into notebooks, according to Craig Wallentine, the company's marketing manager.

Now, 10 salespeople at Du Pont Tyvek Protective Apparel, a Wilmington, Del.-based division of Du Pont Co. that has $500 million in annual sales, are training to use a telephone-based system intended to free them up to do more selling.

The toll-free system — TalkText from MobileWord Communications LLC — is like a stenographic or transcription service, except all information is converted by human operators from voice to data and stored on a common marketing database for Du Pont.

More Tyvek protective suits might be sold if the company's system works as planned

The system doesn't replace notebooks, but it does spare salespeople the tedious work of updating accounts after their usual two to four customer meetings each day. TalkText lets salespeople use the phone's touch pad to follow a series of requests for information. That way, they quickly file information previously entered on a notebook.

"Salespeople don't want to be encumbered," said Judi Hodges, an analyst at International Data Corp. in Framingham, Mass. "Salespeople want to be out in the field to make commissions."

At the end of the week, the sales force can download to their notebooks the call-report files recorded earlier in the week by telephone from MobileWord's password-protected

Sales force, page 60

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intel inside pentium II

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Shareholders approve name Inprise; Borland is no more

By Clare Haney

NO MORE Borland International, Inc. The software company that opted to change its name in April is now officially Inprise Corp.

Shareholders gave their seal of approval to the name change at the company's recent annual stockholder's meeting. The software tools vendor announced last week that it was to be known officially as Inprise from now on and that the Nasdaq Stock Market symbol for the company has been changed from BORL to INPR.

Somewhat ironically, Borland's attempt to break with its past repeats the strategy adopted by the company's once-bitter rival in the software development tools arena, Gupta Corp.

The name Inprise was chosen to reflect the Scotts Valley, Calif., vendor's intention to focus on the enterprise software market, leaving behind its traditional roots in the desktop tools business.

But Inprise officials recognize that the Borland name still carries weight, and the company reiterated last week that its tools family will continue to bear the Borland brand name.

Somewhat ironically, Borland's attempt to break with its past, which included an often troubled financial reputation, repeats the strategy adopted by the company's once-bitter rival in the software development tools arena, Gupta Corp.

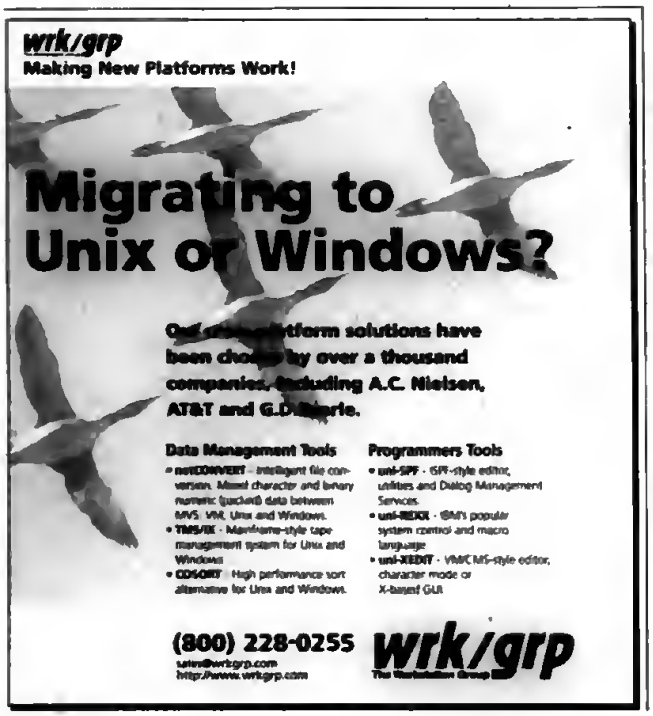
A RECHRISTENING

A little over two years ago, Gupta — in the wake of the retirement of company founder, CEO and Chairman Umang Gupta, and poor financial results — decided to rechristen itself Centura Software Corp. in honor of its high-end, 32-bit Windows-based tools family.

Since its name change, Centura's fortunes haven't rebounded as the company had hoped. For instance, the vendor's attempt to acquire InfoSpinner, Inc. was aborted last year.

But Centura's most recent financial results for the first quarter, the period ended March 31, saw the company in the black. Its operating income was $1.3 million, compared with an operating loss of $1.2 million for the same period a year ago. Interestingly, Centura still uses the Gupta name in company literature. □

Haney writes for the IDG News Service in Hong Kong.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The Workstation Group

Sales force

CONTINUED FROM PAGE 57

World Wide Web site or request a file as an E-mail attachment. MobileWord synchronizes all new data with Du Pont's customer database.

Wallentine said the time saved using the new system will provide the equivalent of another salesperson in the field, which will let Du Pont Tyvek sell more material to their vendors. A typical sale nets $1,000 to $100,000.

The phone-based system is part of the division's overall effort to automate its front-office sales, service and marketing efforts and tightly integrate them with an SAP AG back-office financial system, said Eric Heck, global information systems manager at Du Pont Tyvek.

The company plans to expand its use of the centralized database to help it find new business opportunities and better manage business with about 200 direct customers who buy material from Du Pont Tyvek, Heck said.

With the new system, for example, employees will be able to enter information gathered at trade shows or collected from surveys or advertising campaigns.

"We sell tons of [Tyvek material], but there may be markets we're not playing in that exist," Heck said. With a shared database, the company can "slice and dice data" and find new customers. For example, Du Pont Tyvek suits are often used when handling chemical or hazardous spills but could also be better marketed for users who work with oil or repair equipment.

Heck said the unit plans to expand the TalkText system to more users throughout its selling chain — from the company that makes the hazardous-materials suits using rolls of Tyvek fabric to the resellers — so vendors and resellers can share information with Du Pont Tyvek.

"It's the data integration that is key here," he said. □

SAP warehouse

CONTINUED FROM PAGE 57

for reporting and analysis, Cox said. The Japanese maker of fax machines, printers, typewriters and sewing machines expects to install the new software early next year as it upgrades to R/3 4.0.

Business Information Warehouse combines a relational data analysis server with end-user query and reporting software, built-in data extraction routines and other tools. It is due for release to about 70 early users late this month, and general shipments are planned for August [CW, June 8].

The software is supposed to give R/3 users a more palatable warehousing method than the two choices they have now: using SAP's tricky procedural language to pull information in to standalone data warehouses or letting employees fire processor-hogging queries at R/3 transaction systems.

Not all users are sold on the idea. Andy Hafer, technology chief at Hydro Agri North America in Tampa, Fla., said he has all but ruled out using Business Information Warehouse for the company's reporting needs because of its newness "and some suspicions we have about it based on the learning curves we've risen up with SAP."

But count GATX Capital Corp. in. The San Francisco-based asset management firm expects to use the software to spread R/3 data to a broader and higher-level group of executives and business analysts without having to build and maintain a separate data warehouse.

"Keeping things simple was one of our key motives for going to SAP," said Michael Cromar, chief financial officer at GATX Capital. But getting data out of R/3 for analysis is tough now, he said. And for performance reasons, GATX lets only line managers run reports directly off of its R/3 systems.

Colgate-Palmolive Co. is in a similar boat. The New York-based consumer products manufacturer runs daily order and shipment reports inside R/3 and puts some sales and marketing data in a mainframe-based data warehouse for longer-term analysis.

But transportation statistics, labor usage rates and other information is essentially locked up in R/3, said Marybeth O'Donnell, director of marketing and sales systems at Colgate-Palmolive. Business Information Warehouse should let R/3 data analysis be opened up to every part of the company, said O'Donnell, who is beta-testing the new software.

For SAP, the warehousing product is a chance to atone for earlier reporting and analysis tools that were too hard to use, said Joshua Greenbaum, an analyst at Hurwitz Group, Inc. in Framingham, Mass. "The one thing they can't do is blow it again," he said. □

SHORT

Manufacturing upgrade

Agile Software Corp. last week announced an upgrade of its software that simultaneously transmits planned manufacturing changes to different enterprise resource planning systems.

Officials at the San Jose, Calif., company, which targets makers of electronics and medical devices, said Agile Workplace 4.0 can alert multiple suppliers and contract manufacturers about upcoming changes in product configurations.

The software is available now and costs $1,000 to $3,000 per user.

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Upgrades for euro needed

CONTINUED FROM PAGE 57

and Monetary Union (EMU) project manager at the Frankfurt-based pharmaceutical giant.

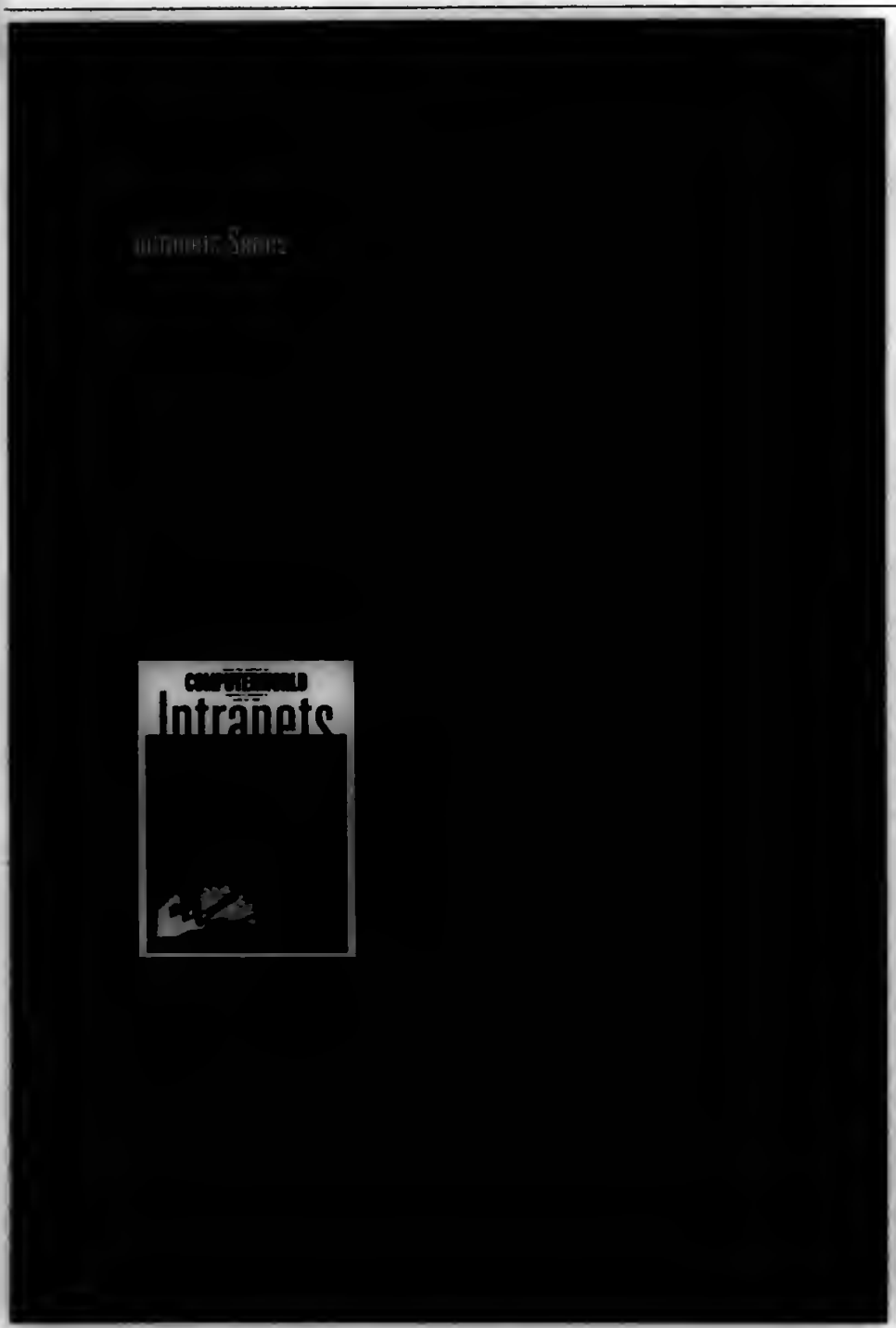
Hoechst isn't alone. Dow Chemical Co., a big SAP R/2 shop in Midland, Mich., is also talking to SAP about alternatives to shutting down Dow's manufacturing and financial systems in order to install euro-compliant SAP software modules, said Roobik Komeadjian. He is heading up the plastic and chemical giant's year 2000 and EMU projects from its Edegem, Belgium, offices.

The conversion "could become a problem . . . with the [transaction] volumes we're processing" in countries such as France and Germany, said Komeadjian, who is expecting an answer from SAP by the end of next month.

Hoechst discovered that one of its peers, Fresenius Group AG, expected to spend two weeks converting its R/3 system — which runs the heart of its financial operations — to handle the euro.

Hoechst can't shut down its own production systems for more than four days, so it met with SAP and suggested setting up a separate test server to accommodate a weekend changeover of its production R/3 systems, Lauscher said. SAP agreed to the changes, he added.

Eleven European Union members will start using the common currency on Jan. 1, 1999, for certain transactions. The euro will become common currency in 2002. □



NEW PRODUCTS

EMC CORP. has rolled out EMC Data Manager (EDM) Symmetrix Path, backup and restore software for Windows NT data stored on EMC Symmetrix subsystems.

The Hopkinton, Mass., company said all EDM configurations on Symmetrix systems will include the Symmetrix Path option. Symmetrix Path enables backup of Windows NT file systems and Windows NT versions of Oracle Corp.'s Oracle8, Microsoft Corp.'s SQL Server or Exchange, SAP AG's R/3 and Lotus Development Corp.'s Notes or CC:Mail. The software moves NT data from Symmetrix subsystems to tape in network-independent backup and restore.

Pricing for an EDM configuration begins at $150,000.

EMC
(508) 435-1000
www.emc.com

LERNOUT & HAUSPIE has shipped L&H Voice Xpress Plus, Windows-based speech recognition software that allows dictation directly into Microsoft Word.

According to the Burlington, Mass., company, the software can convert conversational language to text via a continuous speech recognition engine and a form of natural intelligence called Natural Language Technology. It can understand Word editing commands and can support dictation rates of up to 140 words per minute. Users also can create dictation macros that insert complete blocks of regularly used text into documents.

The price is $99.99 and includes a noise-canceling microphone.

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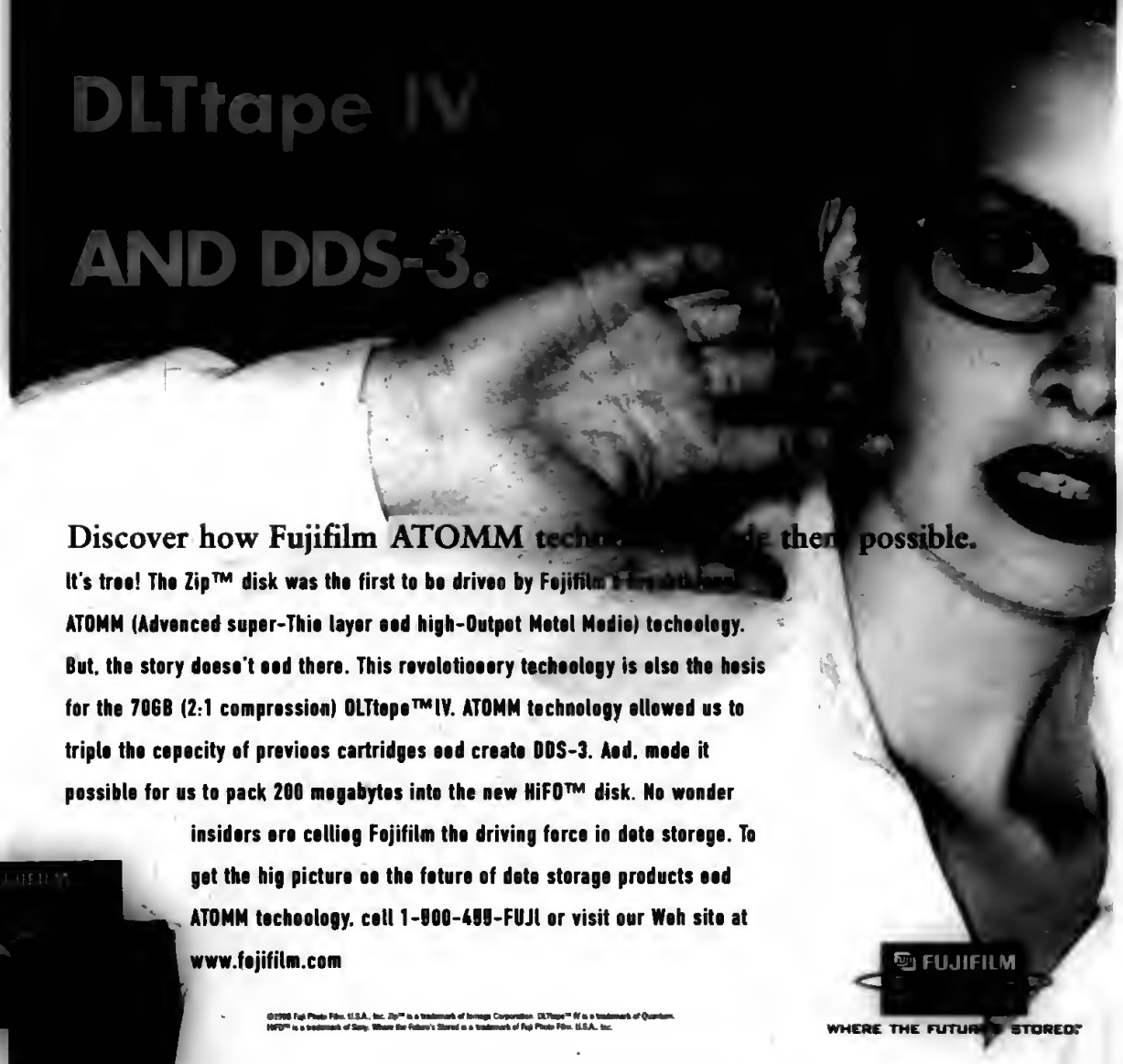

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Briefs

HP pulsing it out

Hewlett-Packard Co. has announced a palmtop PC with a 75MHz microchip and 32MB bytes of RAM. The HP 660LX has a color display, runs Microsoft Corp.'s Windows CE 2.0 operating system and can be used with HP's new palmtop email manager, which can be downloaded for free at www.hp.com/handheld. The palmtop is expected to ship next month.

Unisys manages server

Unisys Corp. has announced a new low-end to midrange server. The ClearPath ULP200 runs Unisys' proprietary MCP/AS operating system, applications and databases and Windows NT.

More storage options

Storage Technology Corp. in Louisville, Colo., has announced the OpenStorage 9340 disk array and the OpenStorage 9345 RAID system. Both have full redundancy. Fibre Channel interconnections from the server connection through the disk drives. Both are available soon. The 9340 pricing starts at $18,000, and 9345 pricing starts at $30,000.

HP to fix 'em faster

HP in Palo Alto, Calif., has announced a program to reduce turnaround time to 48 hours and enhance service for repairs on notebooks for corporate customers. HP is partnering with Sedona, Inc., a United Parcel Service of America, Inc.-affiliated company, to provide the repair service for its new line of OmniBook notebooks.

IN THE CARDS

Projected worldwide smart card revenue

Source: Insight Research Corp., Parsippany, N.J.

SGI upgrades Irix operating system

FEATURES OF SGI'S IRIX 6.5

- Can support up to 128 processors
- Can back up 1T byte of data in one hour
- Includes bundled management software: CA's Unicenter, Enlighten's workgroup management software and Syntax's management server for managing Windows, NetWare and Macintosh clients
- Supports CORBA, DCOM, Microsoft Hydra and Unix/NT integration software

▸ *Adds scalability and better NT integration*

By Jaikumar Vijayan

SILICON GRAPHICS, INC. (SGI) is bolstering its Irix operating system with new features that give users increased application scalability, manageability and better integration with Windows NT.

In its first major operating system overhaul in nearly two years, Mountain View, Calif.-based SGI this week will release Irix 6.5, a Unix variant that supports up to 128 processors.

It also features bundled management software such as Computer Associates International, Inc.'s CA-Unicenter and Unix/NT integration software from companies such as Hummingbird Corp. (see chart).

That kind of scalability is crucial mainly for huge compute-intensive scientific and technical applications such as computational fluid dynamics and molecular modeling.

Some commercial applications, such as large data warehouses and photo-realistic animation for movies, also require very large systems.

That's one reason SGI's customers include several Hollywood studios, including Sony Imageworks and Pacific Title.

Equally important, highly scalable servers can be partitioned into several smaller servers, making it possible for users to cut management costs and space by consolidating several small servers into one large box.

The latest incarnation of the Irix operating system, which is supported across SGI's product line, should give users at the high end the room they need for future application growth.

At the same time, it gives low-end workstation users some differentiation from Windows NT, said Greg Weiss, an analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y.

"Their No. 1 differentiation with this product is the support for 128 processors," Weiss said.

Other Unix vendors, such as Sun Microsystems, Inc. and Hewlett-Packard Co., also have highly scalable operating systems but none that scales to 128 processors, he said. Sun's So-

SGI, page 68

Toshiba servers face uphill battle

▸ *Unknown in market where brand is key*

By April Jacobs

TOSHIBA AMERICA Information Systems, Inc., best known for its business laptops, plans to enter the U.S. corporate server market July 15 with its Magnia line. But users and analysts say it has a tough road ahead.

That's because corporate users put a lot of faith in brand names and long-term relationships when it comes to servers. And, although Irvine, Calif.-based Toshiba has a good name in the laptop market, it is relatively unknown in the corporate desktop and server arena, observers said.

And competition from giants such as IBM, Compaq Computer Corp., Hewlett-Packard Co. and Dell Computer Corp. will make inroads difficult for Toshiba, they added.

"Technology-wise, I wouldn't have any problem looking at a Toshiba server," said Matt Merrick, vice president of information systems at Merrick Printing Co. in Louisville, Ky. "But I probably wouldn't consider buying one because I'm trying to standardize my hardware configurations, and I've already chosen HP for servers."

Features of Toshiba's Magnia 3000:

- Pentium II 350- and 400-MHz processors with ECC memory
- Redundant power supplies and hot-swappable drives
- Entry price: $3,500
- Ships: July 15

Toshiba has been in the Intel Corp.-based Japanese server market since 1992. It has also had offerings in the RISC market since 1977, focusing on SCO Unix.

Now the company is making its foray into the U.S. market with a workgroup server, the Pentium II-based Magnia 3000, set to ship July 15 and priced at $3,500.

The Magnia 5000, a departmental server, is set to debut the first week of August.

Analysts said the company's greatest challenge will be convincing users that it has the support and service necessary to operate a server business in a market already crowded by big players that have long held accounts in the corporate arena.

At the same time, companies such as IBM and Compaq are duking it out for market share. For example, IBM announced last week that it will use its 12,000-plus midrange sales force to sell its line of NetFinity PC servers into corporate accounts, which are placing more emphasis on Windows NT-based servers.

"The server market is very tight right now, and there may not be much room for another player to compete," said Jane Wright, an analyst at Datapro, a consultancy in Delran, N.J.

Toshiba, page 66

PC Expo: From agents to Xeon chips

By April Jacobs and Kim Girard

Users will see a wide range of new products at this week's PC Expo in New York, from servers based on Intel Corp.'s Xeon processor to IBM's desktop systems management technology.

Technologies debuting at PC Expo will include the following:

▪Compaq Computer Corp., Dell Computer Corp. and IBM will demonstrate servers using Intel's speedy new Xeon chip.

Xeon incorporates a 100-MHz system bus and can accommodate up to 2M bytes of Level 2 cache, providing a substantial performance boost over its predecessors.

▪IBM will demonstrate its Universal Management Agent, a combination of software and firmware for managing heterogeneous client environments.

It includes components pulled from Intel's LANDesk and IBM's Tivoli management suites.

▪IBM also will unveil a workstation, dubbed the E Pro Intellistation, that is targeted at high-end desktop users and entry-level workstation users.

It features a 100-MHz system bus and Advanced Graphics Port graphics.

PC Expo, page 66

Analysts expect Western European PC market to grow

By Kristi Essick
LONDON

AS ASIAN ECONOMIES continue to suffer, large PC manufacturers are increasingly turning to Western Europe to bump up international sales, according to new research from International Data Corp (IDC).

PC unit shipments in the region will grow about 14% this year, compared with last year, the Framingham, Mass., research firm said.

While shipments also grew at that rate last year, the fact that the market here is growing steadily will draw manufacturers to increase their focus on the region, especially considering the unpredictable and declining Asian PC markets, IDC said.

But despite relatively healthy growth in overall shipments so far this year, the average price of a PC has taken a significant hit, causing market revenue to grow just 4.1% this year compared with last year. Last year, revenue grew 8.5%.

The average price of a PC in Western Europe will decline 8.5% this year and another 7% next year, said Terry Ernest-Jones, an analyst at IDC in London.

Although falling PC prices are great news for consumers and businesses in Western Europe, the same isn't true for Europe's range of smaller PC manufacturers.

As large-scale vendors such as Compaq Computer Corp. and IBM continue to drop prices by streamlining production and buying components in massive quantities, smaller vendors won't be able to keep up and will have to drop out of the market altogether, Ernest-Jones said.

In some European countries, users can purchase a PC and monitor for about $700. Only manufacturers that produce large volumes can make a profit from such small margins, Ernest-Jones said. "The trick is to produce PCs in very high volumes, and that, in turn, has the effect of squeezing out the companies that are not able to produce in that volume," he said.

Already, the outlook for native manufacturers is "grim," IDC said. It noted that companies such as the Netherlands' Tulip Computers NV and Germany's Siemens Nixdorf PC manufacturing unit have had to sell off their manufacturing businesses to outsiders this year. □

Essick writes for the IDG News Service in London.

Toshiba

CONTINUED FROM PAGE 65

But Toshiba may be making a good move in that many users also want to deal with vendors that can offer them a range of hardware, Wright said.

Other companies have succeeded in entering the server business in this way. Dell, for example, launched its server business a few years ago after making a strong showing in the desktop market. Similarly, Sioux City, N.D.-based Gateway purchased Advanced Logic Research for its server technology last year.

In addition to being the new kid on the block, Toshiba may have to overcome some users' discontent with parts delays in recent months, according to analysts and users.

"We have had problems with Toshiba delivering additional peripherals for laptops," said John Wohn, division manager at Hicksville, N.Y.-based Market Span, Inc., formerly known as Long Island Lighting Co.

Wohn said it has taken four to five months to receive some upgrade components. □

PC Expo: Lots of products on deck

CONTINUED FROM PAGE 65

- NEC Corp. in Mountain View, Calif., will debut universal notebooks — the Versa LX and Versa SX — that share the same docking station and components. Pricing starts at $3,499.
- Compaq will announce the Armada 1700 series, a enhanced version of the Armada 1500 notebooks.

The Armada 1700 features the mobile Pentium II 233-MHz or 266-MHz processor, up to 8G bytes of storage, 32M bytes of SD-RAM, a 56K bit/sec. modem and a dual bay that accommodates a second hard drive.

Pricing for a 233-MHz Pentium II Armada with 12.1-in. display starts at $2,869, and pricing for a 266-MHz Pentium II with a 13-in. display starts at $3,349.

- LG Electronics in Englewood Cliffs, N.J., will introduce the Phenom Handheld PC Ultra. Priced at $899 and available this month, the Phenom features Microsoft Corp.'s Windows CE 2.0 operating system.
- Toshiba will show off the new Satellite 335 notebook line, which is equipped with 266-MHz Pentium MMX processors and a 12.1-in. screen. Pricing starts at about $2,500. □

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SGI upgrades Irix

CONTINUED FROM PAGE 65

laris, for example, tops out at a maximum of 64 processors.

NASA's Los Alamos, N.M., lab is one user that needs that kind of scalability. The organization currently runs huge computational fluid dynamics applications on a 128-processor SGI supercomputer.

"The new version [of Irix] will meet the computational and performance requirements" of users such as NASA, said James Taft, a NASA consultant at the Los Alamos laboratory.

This week's moves are part of SGI's attempt to regain some momentum it lost over the past few quarters. Manufacturing problems, delayed product shipments, a costly acquisition of Cray Research, Inc. and pressure from low-cost Windows NT workstations have had the once high-flying company suffering through one bad quarter after another.

The problems caused SGI to lay off nearly 1,000 of its 11,000 employees last fall. It also triggered the resignation of CEO Ed McCracken.

At that time, the then Unix-only SGI announced it would start shipping Intel Corp.-based Windows NT workstations. NT will remain the main focus at SGI, even though in April, new CEO Rick Belluzzo — formerly the No. 2 executive at HP — said SGI would continue its push into the high-end Unix technical computing market.

He also said the company would expand into a few commercial niches, including World Wide Web servers and decision-support systems, both of which will benefit from the increased scalability of Irix. □

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NEW PRODUCTS

ARTECON, INC. has announced the SuperFlex 3000 DGR Ultra, a RAID storage subsystem for Windows NT and NetWare file, application and E-mail servers.

According to the Carlsbad, Calif., company, the subsystem has 32M bytes of cache (expandable to 128M bytes) and can house between three and seven disk drives. The latest high-speed 4.3G-byte or 9.1G-byte drives that operate at 10,000 rpm (industry standard is 7,200 rpm) are also available.

Pricing ranges from $9,272 for an entry-level 12.9G-byte system to $21,912 for a fully configured 63.7G-byte system.

Artecon
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NOKIA DISPLAY PRODUCTS, INC. has announced the 500XA flat-panel display.

According to the Sausalito, Calif., company, the display measures 15.35 in. by 3.35 in. by 13.58 in., weighs just over 15 pounds and has a viewing area equivalent to a 17-in. CRT display. It supports a maximum resolution of 1024 by 768 pixels and has a response time of 30 msec.

A viewing angle of 120 degrees allows images to be seen by several viewers at a time. The price is $1,879.

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Managing

Mergers made easier

JOHN BERTRAND

Banks have learned many hard lessons from mergers – lessons that any IS manager can put to good use

BY GARY H. ANTHES When Chemical Bank bought Manufacturers Hanover Trust in 1991, the systems consolidation process was excruciatingly painful and protracted, and cost savings were delayed for months. And in the IS shop, the tedium of analysis paralysis was relieved only by the turf battles among managers fearful for their futures.

But four years later, when Chemical merged with Chase Manhattan Corp., a carefully conceived and crisply executed merger plan zipped through the difficult technology consolidation in a fraction of the time that marked the Chemical/Manufacturers Hanover marriage.

"Experience pays," says Steve Sheinheit, senior vice president of corporate systems and architecture at New York-based The Chase Manhattan Bank Corp., and a key player in both mergers. "We learned a lot in that first merger."

Indeed, companies involved in recently announced megamergers — BankAmerica Corp. and NationsBank Corp.; Citicorp and The Travelers Group; First Chicago NBD Corp. and Banc One Corp.; Well Fargo & Co. and Norwest Corp. — could learn much from the long, checkered history of bank marriages. The record shows that banks must move with speed, technical smarts and sensitivity to people issues if they are to keep customers happy and get the bottom-line benefits that prompted the mergers.

Speed is critical in a bank merger. The banks promise shareholders big savings by consolidating systems and back-office operations, and information systems managers are under tremendous pressure to get those savings flowing quickly by turning off redundant applications and shuttering unneeded data centers.

During the Chemical/Manufacturers Hanover merger, a transi-

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Mergers

CONTINUED FROM PAGE 48

tion team worked for months to decide which of the banks' thousands of applications, data centers and networks would be retained and which would be sold or scrapped. Based on those decisions, a new IS management team was chosen from among the two banks' staffs.

But in the Chase/Chemical merger, a new IS management team was picked almost immediately. It then worked as a unit to choose its IS assets. "That allowed our decisions to be made around picking the best systems and moving as rapidly as possible, as opposed to defending our turf," Sheinheit says.

THE PEOPLE PERSPECTIVE

Dispatch is equally important in attending to human assets, experts say. Rich Alden, vice president for special projects at First Union Corp. in Charlotte, N.C., has worked on about 20 bank mergers. He says systems projects often come to a halt when a merger is announced. "So now you have a bunch of people, who used to be pretty busy, with nothing to do," he says. "Rumors start, and no good comes of that."

Put those people to work, Alden says, even if it's just preparing inventories and documentation for their systems.

Dale Terrell, who headed the IS department at Security Pacific and Banc One Corp. in Columbus, Ohio, during some three dozen mergers, advises keeping the systems conversion work elevated in importance. "Don't let your people feel that, 'Oh, well, we already did the acquisition, the thrill's gone; now we have the drudge work,' " he says.

Terrell says banks that do acquisitions frequently, such as Banc One, should have permanent, dedicated IS merger teams. The teams should have their own computer resources, documented procedures and reusable software templates for system conversions.

"Good people can always find a job somewhere else, so the key is to immediately get involved and make them feel they still have a career path," advises Robert Landry, banking group director at The Tower Group in Newton, Mass., which analyzes financial industry technology. "But if you're known as a 'rape-and-pillage' bank, then before you even get to people, they will already have made other plans."

Wells Fargo employed a rape-and-pillage approach in its 1996 acquisition of First Interstate Bank, Landry says, and the resulting loss of key IS and businesspeople at First Interstate cost Wells Fargo dearly. "They basically lost all the people who knew how their [systems] worked," he says.

Massive systems problems plagued Wells Fargo in the wake of the hostile takeover. Millions of dollars in deposits were posted to the wrong customers' accounts, checks took weeks to clear, an automated telephone banking system went dark for several days and direct deposits were delayed. Customers fled, and deposits, earnings and the bank's stock price tanked. The bank lost $180 million in a single quarter last year because of computer problems.

Wells Fargo officials declined to be interviewed.

THE WEEDING PROCESS

There are low-risk ways to speed the pace of systems consolidation, Sheinheit says. In the Chemical/Manufacturers Hanover merger, a transition team considered applications individually, based on a detailed comparison of features and functions. But in the Chase/Chemical merger, about 2,500 applications were clustered into just 67 logically related groups, and choices of which systems to keep were made by group. Those choices were based on just six criteria (see box at right), not a laundry list of features.

That sped the process of choosing and also saved a great deal of effort writing interfaces between incompatible systems, Sheinheit says.

Another way to jump-start systems consolidation work: Get IS involved before the merger is finalized, during the "due diligence" phase of negotiations. The financial terms of the merger are set during that period, and they depend on the estimated timing and savings from consolidation.

Says DuWayne Peterson, information technology consultant and former chief information officer at Merrill Lynch & Co.: "Often, the systems people are not involved in the conversation early on, but they have a critical role to play — hopefully to put some reasonable estimates of time and cost savings back into the pot."

Alden says he's always involved in setting the dates that determine cost-savings estimates. "Once the merger announcement is made, we already have a date for when we are going to do the [systems] conversions, and we have a little bit of a head start because we have some preliminary information," he says.

Then, Alden says, it comes down to sound project management practices — "task lists with milestones, issues lists and a process people are familiar with." First Union, which has gone through more than 80 bank mergers, has documented procedures — or "cookbooks" — for converting systems, he says.

Banking technology consultant Art Gillis, president of Dallas-based Computer Based Solutions, Inc., says a bank merger IS team should have the following key players:

- A project manager "with the skills of a military leader and the authority of the CEO. If he gets in a bind, he has immediate access to the red telephone to call the CEO and, after that, the board of directors."
- A senior technical person who will "draw the blueprint for the new architecture. He may look like a freak, but he's a genius. He knows what works."
- A senior business architect — a banking person who, for example, "knows how to choose a commercial loan system."

"With these three people, I'm about 60% home," Gillis says. "I can't have any doubts about these guys. After that, I shift gears from quality to quantity. Now I want thousands of troops. We need lots of people chipping away at this huge iceberg to break it down into little ice cubes."

TIPS FROM CHASE Six criteria for picking best-of-breed systems from two merging banks:

1. Ability to scale, handle bigger loads
2. Ability to support and maintain them over time
3. Functional capability
4. Long-term fit with bank strategies
5. Availability of skills to support
6. Cost to convert, maintain and operate

Each criterion is weighted and systems are rated and scored

The year 2000 problem introduces special considerations in bank mergers. Some experts, such as Joe Boiven, president of the Global Millennium Foundation in Ottawa, say big mergers should be avoided until after the critical date change. Even if systems aren't consolidated, mergers simply entail more change than managers can handle on top of existing year 2000 challenges, Boiven says.

Banks already in merger talks, Boiven says, should conduct a "technology due diligence performed by IT experts — not lawyers and accountants." That would consider the risk of business failure due to disruptions in the banks' year 2000 activities.

David Iacino, who spearheads year 2000 remediation at BankBoston, says his "millennium project" took a hit in 1996 and 1997 during the merger of Bank of Boston and BayBank, when the top priority in IS became the conversion and consolidation of systems. "Today, no bank — including BankBoston — could sustain the degree of product integration that we undertook in 1996," he says. "There simply isn't enough time because of the millennium problem."

Mark Rodrigues, a vice president who heads the financial industry group at American Management Systems, Inc. in Fairfax, Va., says banks do a good job of getting the short-term efficiencies they seek in mergers. "Anyone can get cost savings for a year or two," he says, "but then what? I don't see a lot of visionary statements from these institutions on the use of technology to improve the top line — to create innovative financial services. And I don't see IT departments well-equipped to support that kind of innovation."

The computing and communications infrastructure at most banks isn't conducive to innovation, Rodrigues says. Years of regulation have left bank systems rigid and "over-engineered," he says. "If I'm doing credit cards, and the guy sitting next to me is selling mortgages, I can't even get his [profit-and-loss statements] easily. Other than E-mail, I can't really share information about a customer or about risk, for example."

Indeed, IS is stuck between a rock and a hard place at merger time, besieged on the one hand by demands to improve the bank's bottom line, while on the other struggling with its own budget constraints, the year 2000 and the need to innovate. "You can't just turn your energies toward merging," Landry says. "You have to also be moving forward with new products." □

Anthes is Computerworld's editor-at-large.

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MS. MIS
WOMEN IN INFORMATION SYSTEMS

GLOBAL surprises

Female managers may be in for a rude awakening when they work with men in other countries

BY LAURA DIDIO

The global village can serve up some nasty surprises for female IS professionals living or working abroad.

In the past year, I've spoken to dozens of female managers, each with a tale of culture clash — especially when she's the boss.

They all encountered difficulties overseas. Happily, though, they found innovative ways to deal with their travails. In the absence of human resources departments and equal employment opportunity commissions, and often lacking even a trusted shoulder to cry on, they relied on their intelligence, ingenuity and wits to succeed.

Japan was the country most often cited for negative, sexist treatment of female IT managers. Though some of these stories go back 10 or 20 years, the women say the problem persists to some extent today.

WHO'S THE BOSS?

Eva Chen, a Chinese-American who's now chief technology officer at Trend Micro Devices, has encountered barriers doing business in Japan since the 1980s.

She cites an ongoing problem: Entering a meeting room and having the men just look at her. "Finally, someone will ask, 'Where's your boss?' " Chen remembers. Worse still can be the lack of support from colleagues. At after-hours business meetings, Chen's Japanese subordinates asked her not to tell their business partners that she was the boss. Initially, Chen went along with the ruse and even had special business cards printed listing her title as engineer. But she quickly began a ruse of her own. "I acted like the dutiful secretary taking notes. In reality, I wrote instructions for my male subordinates telling them how to negotiate the deal," Chen says. Slowly, trust developed. "People realized my real role, and they just started to live with it."

Things in Japan are changing, though sometimes in strange ways. Last year, a female IT consultant traveled to Tokyo with a male colleague for a client visit. "Joan" is intelligent and heavyset. Expecting to take a backseat in the respect department to her male co-worker, Joan was instead accorded unusual deference — for a bizarre reason. Her hosts crowded around her smiling and talking excitedly about how big she was. The Japanese were impressed with Joan's plus-size status. In this instance, at least, the usual derogatory connotations associated with being heavy were turned upside down. Fat equaled power.

In Sydney, Australia, a woman we'll call Audrey, working as an IT manager, dodged obstacles of a different sort in 1995 at a manufacturing firm. Her boss had no compunction about delegating authority to her. The problem: blatant sexual advances that included groping and chasing her around the desk. "It usually happened in the afternoons after he came back from a three-hour liquid lunch," Audrey says. "Shunning his advances didn't help, and neither did the fact that I was married. And forget about HR — he was also harassing the head of the HR department. It was considered macho and acceptable." On the last day of her employment, her boss visited her at home for a last try at seduction. "I finally slammed the door in his face," she says.

Carol, an American network administrator, took a three-month assignment last year to set up her company's new network in Cartagena, Colombia. She says she learned quickly to stand up for herself on the job. "My boss, a married man with a grandchild, offered to take me out for dinner the first night to help get me acclimated; the trouble was, I was the main course," Carol says. She fled the restaurant in short order, but the unwanted advances persisted on the job.

Such machismo isn't unheard of among Latin men, some of whom consider seduction to be all in a day's work. But the Colombian boss's amorous advances backfired when Carol decided to fight fire with fire. "Lorena Bobbitt became my patron saint. I pasted articles about her on my monitor. The next time he grabbed me, I slapped him in the face, started brandishing some thin wire cable and told him I'd unplug the whole network," she recalls. "After that, he stayed away. But it was a long three months."

Officially, all U.S. and foreign businesses say that type of blatant discrimination and sexism isn't tolerated in the workplace. But women managers doing business abroad know better. "Things are better in the '90s," Chen says. "But the bottom line: If something like this happens to you, you're going to have to deal with it yourself." □

MORE ONLINE

Laura DiDio will conduct a forum this week on the issues in this column on *Computerworld online*.

www.computerworld.com/more

DiDio is Computerworld's senior editor, security and network operating systems.

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FROM MIND TO MATTER.

PETER G. W. K

THE SOUL OF THE NEW MACHINE IS IP

It doesn't matter if you're in Silicon Valley, Silicon Alley, telecommunications, media or IS: We're all in the Internet Protocol (IP) network business now.

IP gives IS more than an opportunity to simplify our absurdly cumbersome enterprise technology platforms. More important, IS can explain just what we're up to.

Today, it's hard to provide a succinct, cliche-free summary of the IS mission and technology strategy. I recall with more than a red face my own efforts to explain to a CEO and his team the key IS elements of supply chain management. After discussing the Internet/intranet/extranet bit, reviewing the Java debate and tackling electronic data interchange, they were deep in Valium Land. IP — whether we talk about private IP networks or the public Internet — provides an out.

Here's what I see beginning to happen across the technology field:

IT ISN'T THE INTERNET THAT MATTERS, BUT THE IP ADDRESS. Silicon Valley is moving from computers as its focus to telecommunications, but not the standard telecommunications IS knows. The Valley thinks consumer electronics and Internet. The combination makes the contentious debates about network appliances vs. PCs irrelevant.

Anything can be an IP address — a coffeepot, car (Ford has already announced that it will make E-mail available in its cars), a digital cellular phone (Nokia's 9000 phone is a phone, fax and 'net browser) or a fire alarm. And because an IP address can access servers and other IP addresses over any IP network, no one will care whether they're on the "real" Internet or some organization's IP network — just as none of us cares which utility is providing electricity to our PC.

WIRELESS DATA COMMUNICATIONS AND INTERNET TELEPHONY IS COMING FAST. Soon — in less than five years — any IP address will be able to link to any other IP address, without needing to travel over the 'net or be confined to wired networks.

The leaders in telecommunications hardware inside and outside the traditional industry, such as Lucent and Cisco, are getting ready for wireless as the norm. The last Iridium satellite was launched in mid-May, making any international phone call now a local call. And there are many other satellite and terrestrial digital wireless consortia.

The telecommunications innovators, with Qwest ready to lead, accept that IP telephony is here. Its quality is more than good enough for most people. Put IP voice onto a reliable IP network, and there's no difference between voice and data anymore and diminishing need for separate network bases.

The Valley sees wireless devices as its next gold mine, especially in the home and small office. Wireless laptops are today's Silicon Valley tool and tomorrow's commonplace tool for road warriors. The Internet telephone is on its way from a $1,200 price point to a $300 one, at which point it becomes a mass-market consumer electronic device, like the VCR or the PalmPilot. Already, the new Nokia 9000 Internet phone has reached the $1,000 mark, and it's being followed by lower-cost competitors.

IP ADDRESS DEVICES WILL DRIVE OUT COMPLEX TECHNOLOGIES. The software and hardware innovators in the Valley are already racing to market products inside IP address devices that displace complex elements in traditional networks. TAPI (telephone application programming interface) allows phone calls to be processed in the PC. Hardware devices allow a company to turn a PC into a small PBX. Functions in a LAN/WAN enterprise network now handled by routers and switches will disappear into the IP access device or be spread across IP servers.

Some say it will take time for IP-based devices to move from niche to mainstream. I think that will happen quickly — well within three years — simply because of what I'm hearing from the IS planners and executives I most respect. Within the past six months, more and more of them have said they see wireless as the base for the network of their future. They also see IP as the solution to many of their "integration" problems centered on legacy systems. By adopting IP, they have a practical evolutionary path from the world of complex, expensive IS infrastructures to a simpler and more manageable future. The corporate race to IP will be on very soon.

MESSAGE TO CEOS

IP as the foundation gives IS a clear message for CEOs. What is IS really all about? It's exploiting the opportunities of Internet technology, rather than just the Internet. The browser is the first technology IS has had that doesn't involve user training and complexity of support. Hyperlinks fake database integration, the longest and most difficult problem for IS in meshing legacy applications with new-generation technology-based ones. IP moves IS into the world of consumer electronic costs, innovations and simplicity of use.

Oh, and the network appliance, thin client, Wintel argument? It's irrelevant. They're all just versions of IP devices. IP devices are the customer tools for accessing services and for communication. The old "distributed" computing model was built from the business data center out to the customer. Client/server loaded up the PC with features that strained the network in terms of software, protocols, routes and management tools. IP at last gives us a chance to replace distributed systems with customer access systems.

So, here's the second message from IS to CEOs: We can start building our infrastructure from the customer back to the company, not the other way around. IP is almost literally the customer's calling card. □

Keen's book The Business Internet and Intranets *was published in February by Harvard Business School Press. He can be contacted at peter@peterkeen.com.*

f.y.i.

Is knowledge management in trouble?

How's it going on the knowledge management front?

Not too well, judging from a recent survey on 25 management techniques conducted by Bain & Co., a Boston management consultancy.

Whether measured by satisfaction or use, whether the effort was big or small, knowledge management was at or near the back of the pack. Also, knowledge management rated dead last among techniques used to boost financial results.

"I think it is viewed by people as having extraordinary potential, but [as] extremely complicated to implement. They are still hopeful the long-term benefits will be there, but the immediate costs are much higher than anticipated," said Darrell Rigby, a Bain director.

Which of the oft-hyped techniques work best?

Overall, strategic planning took the top ratings for satisfaction and use in the consultancy's annual survey. And to boost a company's financial results, nothing beats cycle-time reduction, Bain's researchers found.

The bottom line: IT leaders may do better creating systems that help the business planning process or speed up processes than plugging away at knowledge management.

— Allan E. Alter

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Silicon Graphics Award for Breakthrough Science

John Pople

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Toshiba America Information Systems Award for Education

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On June 8, 1998, the Computerworld Smithsonian Awards program honored these five leaders and 10 innovative organizations, whose breadth of vision and pivotal contributions make them role models for future heroes of the information revolution. Since 1989, the Computerworld Smithsonian Awards program has recorded the progress of technology, adding more than 2,500 case studies and 40 oral histories to the Smithsonian Institute's Permanent Research Collection. To find out more about this important resource for best practices and inspirational achievements, go to http://www.computerworld.com.

Computerworld Smithsonian Awards

1998 Finalists

After reviewing the 442 case studies recommended to the Smithsonian Institution by the Chairmen's Committee, a panel of judges—leading technologists, prominent educators, and internationally known leaders—have chosen 52 laureates as finalists for the 1998 Computerworld Smithsonian Awards. In the opinion of the judges, these finalists represent outstanding achievement, innovation, and positive impact on society. To find out more about this years innovation collection including summaries of all laureate projects go to http://innovate.si.edu.

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Junglee Corporation	EDS	**Canopy™ Family of Data Integration Products** allows World Wide Web users to ask complex queries of data that is scattered over a variety of data sources
San Jose Mercury News	Netscape Communications Corporation	**Mercury Center** is tha first newspaper with its complete editorial content and classified ads online
The Home Depot	Sun Microsystems, Inc.	**Touch-screen computers** guide potential employees through tha application process and forward data to managers workstations.
Education & Academia		
Department of Molecular Biotechnology, University of [illegible]	Oracle [illegible]	**Cellworks Project: A Java-based application used in biology** gathers deta from the whole range of incompatible formats and presents tham to tha users in a consistent format.
[illegible] Motors and The United [illegible] Department of Energy	EDS	**Sunrayce'97**—College teams integrate information technology energy management and the excitement of car racing in the nation s premier sun-powered car rally
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JASON Foundation for Education	Sprint	**JASON Project** allows students to control the equipment utilized for scientific investigators from their classrooms.
Survivors of the Shoah Visual History Foundation	EMC Corporation/Andersen Consulting LLP	A 150-terabyte **Digital Library System** provides interactive access to 100 000 hours of video eyewitness testimonies of Holocaust survivors.
Environment, Energy, & Agriculture		
[illegible] Foundation	[illegible] Company	**Koala Habitat Atlas** pinpoints the specific tree species and areas of habitat that koalas need to survive in the wild.
[illegible] Worldwide Facilities Group, [illegible] Services, Energy Efficiency, Systems & Reporting	EDS	**General Motors' Strategic Energy Management System (EMS)** manages peak electrical demand, allowing plants to shut off groups of devices, minimizing costs while assuring vital services such as airflow and arc welding.
Los Alamos National Laboratory, [illegible] PDB Tigress	Silicon Graphics	**Falcon. Breakthrough Software for Simulating Oil Reservoirs** allows detailed understanding of multibillion-barrel reservoirs.
Ossbur State Corporation	Mentor[illegible] Corporation	**COMP Results Distribution System** gives fleet operators in 20 countries immediate availability of engine oil lab tests over the Internet.
[illegible]	Price Waterhouse	**Intelligent Control of Building Energy Systems** predicts tha future energy needs of a building.
U.S. Environmental Protection Agency	Oracle Corporation	**Envirofacts Warehouse on the Internet** provides environmental information on more than a million sites handling or discharging potentially harmful substances.
Finance, Insurance & Real Estate		
Blue Shield of California	Deloitte & Touche LLP	**Improving Health Through Information Access** supports tailored haalth care plans for particular employers and allows data sharing among physicians, pharmacists, and managers.
Fannie Mae and Finet Holdings Corporation	3Com Corporation	**Internet-Enabled Homeownership** lets consumers use the Internet to gather home buying information, complete a mortgage application and receive online loan approval from a participating lender
SAIC Electronic Commerce Rapid Applications Development Laboratory	Price Waterhouse	**CATEX & The Complex Instrument Trading Engine (CITE)** extends the benefits of online commerce from simple non-negotiable instruments like stocks to complex insurance contracts.
The Prudential Real Estate Affiliates, Inc.	Acer America Corporation	**Affiliate Technology Solutions** provides its real estate services network with unprecedented access to a completely integrated communications and technology platform.
Walt Disney Imagineering	AT&T Corporation	**Celebration** uses pre-wired connections to every home in the community to support a private intranet
Government & Non-Profit Organizations		
Focus: HOPE	EDS	**Center for Advanced Technologies** prepares minority men and women to be manufacturing engineers.
Impact Online	America Online, Inc.	**Volunteer Match** connects people with organizations that need volunteers.

Government & Non-Profit Organizations (continued)

Newhall Municipal Court	Information Builders Inc	**WebCourt** provides detailed court case information via the Internet, allowing interested parties to get case-specific information without going to the courthouse or writing or telephoning the court.
Thailand's National Science and Technology Development Agency (NSTDA)	Netscape Communications Corporation	**NSTDA INTRANET Strengthening Thailand's Technological Infrastructure** enhances research efforts that are integral to Thailand's economic and social development.
World Economic Forum	Novell Inc	**Event Information System** facilitates global, personalized, knowledge-generating interaction.

Manufacturing

CADCENTRE Ltd. and Process Systems Enterprise Ltd.	Silicon Graphics	**Virtual Plant** lets engineers see how a new factory will pe before it is built
Delphi Energy & Engine Management Systems	EDS	**Universal Test Stand (UTS)** totally automates ignition pro sting, compressing years of normal use into a few weeks
Fujitsu Microelectronics Inc./ Gresham Manufacturing Division	EDS	**Equipment Automation System (EAS)** supports round-the-clock operation and minimizes downtime of a billion-dollar facility
Genentech, Inc.	Microsoft Corporation	**Final Purification Expansion** expedites critical steps in the manufacturing of new drugs
Pfizer, Inc.	Microsoft Corporation	**Manufacturing Execution System Project** translates each order into a manufacturing plan based on the real-time status of key manufacturing processes.

Media, Arts, & Entertainment

Advanced Television Technology Center	Matsushita Electric Corporation of America/Panasonic Communications & Systems Company	**Digital Television Testing** confirmed the validity of digital broadcasting and laid out the road map for upgrading America's television facilities.
CNN Interactive	Oracle Corporation	**CNN Custom News** categorizes news stories in real-time, then delivers them only to online customers who have indicated an interest in the specific subject.
Jet Propulsion Laboratory	Silicon Graphics	**Mars Pathfinder Mission Web Site** supported the delivery of near real-time images of Mars under a load of over 500 million hits the first month.
National Geographic Interactive	Intel Corporation	**The Complete National Geographic** CD-ROMs provide a searchable reference of all 108 years of magazines.
P.S. 41 (Brooklyn, NY)	Matsushita Electric Corporation of America/Panasonic Communications & Systems Company	**Kid Witness News**, with complete video production studios in inner city elementary and junior high schools, teaches teamwork, leadership, and communications skills, and raises self esteem and academic performance

Medicine

Biomedical Research Foundation of Northwest Louisiana	Computer Motion Inc	**Sciberned Virtual Institute™** extends the results of a 1995 national health-care planning exercise into a living resource.
Carondelet Health	Sprint	**CarondeletNet** provides cost-effective access to hospital data from doctor's offices and homes.
Center for Emerging Cardiovascular Technologies	Silicon Graphics	**Three Dimensional Visualization of the Heart** supports interactive volume renderings of heart's movement in three dimensions.
Jacobi Medical Center	Data General Corporation	**Integration of New Technologies to Improve Patient Care** transmits prescriptions directly to a pharmacy robot that dispenses the exact dosage and packages it for immediate delivery to the patient.
Maimonides Medical Center	Unisys Corporation	**Integrated Health Care Delivery Solution** empowers all health care service team members with the information they need, when and where they need it.
MIOS, Inc.	Sybase, Inc.	**Disease Manager Plus** supports of the attending physician at the moment of individual patient-specific clinical decisions.

Science

Cyberlab, Inc.	Price Waterhouse	**Computerized Robotic Workstation for Drug Discovery Research** controls the protein crystal growing process, increasing their availability in the critical step in modern drug discovery. **Nathan P. Myhrvold and**
Philip Currie	Ernst & Young LLP	**Cyberpaleontology—Supersonic Seacapers** confirms through biomechanical simulation of Jurassic dinosaur tails that their tips, like the end of a whip, could move faster than the speed of sound, creating sonic booms that were probably used for communication and mating.
University of California, Berkeley's Search for Extraterrestrial Intelligence (SETI) Program	Toshiba America Information Systems, Inc.	**Search for Extraterrestrial Radio Emissions from Nearby Developed Intelligent Populations (SERENDIP) Project** uses specialized circuitry, matching the processing speeds of 200 supercomputers, to search 168 million channels of astronomical data simultaneously in the search for extraterrestrial life (SETI).
University of Michigan	Sun Microsystems, Inc.	**The Upper Atmospheric Research Collaboratory (UARC)** allows space scientists to collaborate over the Internet on monitoring and modeling solar activity.
University of Utah	Silicon Graphics	**An Integrated Problem Solving Environment: Applications in Computational Medicine** provides integrated modeling, simulation, and visualization of human anatomy and biology, enabling significant breakthroughs in cardiology and neuroscience

Transportation

Clark County Department of Aviation	EDS	**Clark County McCarran International Airport (Las Vegas) Integrated Airport Information System** provides a common look and feel to airport applications and supports facilities usage throughout the airport.
Norfolk Southern Corporation	Platinum Technology, Inc	**Strategic Intermodel Management System** captures incoming truck data to create loading plans for track-side cranes.
Port Community Rotterdam	Oracle Corporation	**Cargo Card** embeds a digital handprint to identify truck drivers as they enter and leave the port.
SAIC—Science Applications International Corporation	Price Waterhouse	**The Vehicle and Cargo Inspection System (VACIS)** processes gamma ray images, allowing freight train cars traveling at full speed to be inspected for drugs or stolen automobiles.
The Commander, Naval Surface Force, U.S. Atlantic Fleet (COMNAVSURFLANT)	Microsoft Corporation	**SmartShip** reduces ship staffing requirements and allows sailors to do more of their training aboard ship instead of in classrooms ashore.

Computerworld Smithsonian Awards

1998 Finalists

Business & Related Services

Amazon.com, Inc.		Online book store
Ernst & Young LLP		The Evolution of Ernie – The Online Business Consultant
Junglee Corporation		Canopy – Family of Data Integration Products
San Jose Mercury News		Mercury Center
The Home Depot		Touch screen computers

Education & Academia

Department of Molecular Biotechnology, University of Washington		CellWorks Project: A Java based application used in biology
General Motors and The United States Department of Energy	DF	Sunrayce 97
Globalink, Inc.		Automated language translation technology
JASON Foundation for Education		JASON Project
Survivors of the Shoah Visual History Foundation		Digital Library System

Environment, Energy, & Agriculture

Australian Koala Foundation	Hewlett Packard Company	Koala Habitat Atlas
GM Worldwide Facilities Group Utilities Services, Energy Efficiency Systems & Reporting	EF	General Motors' Strategic Energy Management System (EMS)
Los Alamos National Laboratory, Amoco and PGS Tigress		Falcon: Breakthrough Software for Simulating Oil Reservoirs
Quaker State Corporation	Microsoft Corporation	COMP Results Distribution System
SAIC	Waterhouse	Intelligent Control of Building Energy Systems
U.S. Environmental Protection Agency	Oracle Corporation	Envirofacts Warehouse on the Internet

Finance, Insurance & Real Estate

Blue Shield of California		Improving Health Through Information Access
Fannie Mae and Finet Holdings Corporation		Internet Enabled Homeownership
SAIC Electronic Commerce Rapid Applications Development Laboratory		CATEX & The Complex Instrument Trading Engine (CITE)
The Prudential Real Estate Affiliates, Inc.		Affiliate Technology Solutions
Walt Disney Imagineering		Celebration

Government & Non-Profit Organizations

Focus: HOPE		Center for Advanced Technologies
Impact Online		Volunteer Match

Government & Non-Profit Organizations (continued)

Newhall Municipal Court	WebCourt
Thailand's National Science and Technology Development Agency (NSTDA)	NSTDA INTRANET: Strengthening Thailand's Technological Infrastructure
World Economic Forum	Event Information System

Manufacturing

CADCENTRE Ltd. and Process Systems Enterprise Ltd.	Virtual Plant
Delphi Energy & Engine Management Systems	Universal Test Stand (UTS)
Fujitsu Microelectronics Inc. / Gresham Manufacturing Division	Equipment Automation System (EAS)
Genentech, Inc.	Final Purification Expansion
Pfizer, Inc.	Manufacturing Execution System Project

Media, Arts, & Entertainment

Advanced Television Technology Center	Digital Television Testing
CNN Interactive	CNN Custom News
Jet Propulsion Laboratory	Mars Pathfinder Mission Web Site
National Geographic Interactive	The Complete National Geographic
P.S. 41 (Brooklyn, NY)	Kid Witness News

Medicine

Biomedical Research Foundation of Northwest Louisiana	Scibermed Virtual Institute
Carondelet Health	CarondeletNet
Center for Emerging Cardiovascular Technologies	Three Dimensional Visualization of the Heart
Jacobi Medical Center	Integration of New Technologies to Improve Patient Care
Maimonides Medical Center	Integrated Health Care Delivery Solution
MIQS, Inc.	Disease Manager Plus

Science

Cyberlab, Inc.	Computerized Robotic Workstation for Drug Discovery Research
Philip Currie	Cyberpaleontology–Supersonic Sauropods, Nathan P. Myhrvold and
University of California, Berkeley's Search for Extraterrestrial Intelligence (SETI) Program	Search for Extraterrestrial Radio Emissions from Nearby Developed Intelligent Populations (SERENDIP) Project
University of Michigan	The Upper Atmospheric Research Collaboratory (UARC) allows space
University of Utah	An Integrated Problem Solving Environment: Applications in Computational Medicine

Transportation

Clark County Department of Aviation	Clark County McCarran International Airport (Las Vegas) Integrated Airport Information System
Norfolk Southern Corporation	Strategic Intermodel Management System
Port Community Rotterdam	Cargo Card
SAIC–Science Applications International Corporation	The Vehicle and Cargo Inspection System (VACIS)
The Commander, Naval Surface Force, U.S. Atlantic Fleet (COMNAVSURFLANT)	SmartShip

Computerworld Smithsonian Awards

1998 Chairmen's Committee

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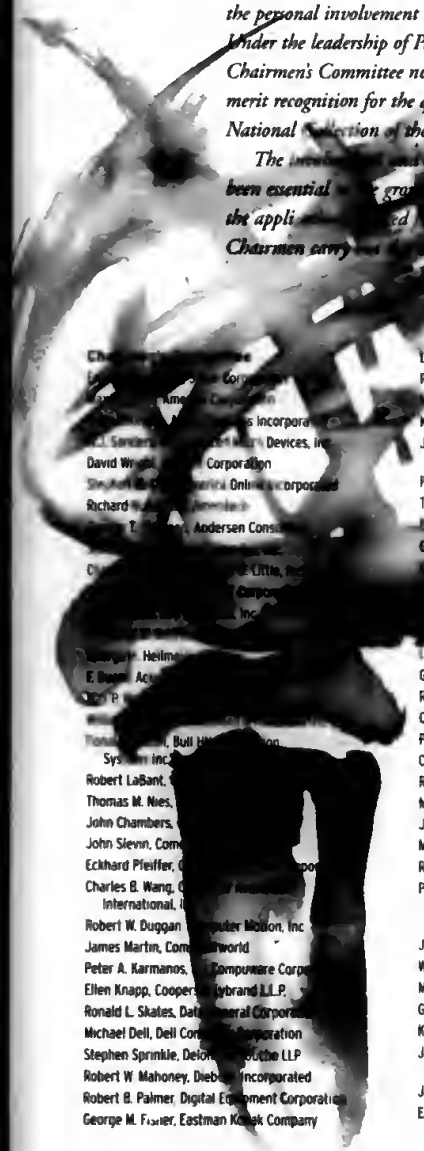
Computerworld Smithsonian Awards

1998 Chairmen's Committee

The initiative to collect and record the history of information technology is sustained and supported by the personal involvement of the leaders of the largest and most influential companies in the IT industry. Under the leadership of Patrick J. McGovern, Chairman of International Data Group, members of the Chairmen's Committee nominate innovators of information technology who, in their personal opinion, merit recognition for the quality and impact of their work and inclusion in the Smithsonian Institution's National Collection of the History of Information Technology.

The [illegible] commitment of the individual members of the Chairmen's Committee has been essential [illegible] the Computerworld Smithsonian Innovation Collection. The quality of the appli[illegible] the Collection is testimony to the seriousness with which the Chairmen carry [illegible] function.



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Ronald L. Skates, Data[illegible]neral Corporation
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Review Center

NT lures IT with CASH

Corporate managers hope to cut their total cost of ownership by standardizing on Windows NT and using NT tools to lock down the desktop, according to a *Computerworld* survey

SHAWN BRUCE/JADE

BY AMY MALLOY

Next week, Microsoft Corp. is scheduled to release Windows 98, and one key marketing pitch is sure to be how it can lower a corporation's cost of ownership for PCs. Yet when it comes to managing costs, it is Windows NT that has the attention of corporate managers, not Windows 98, thin clients, Unix or Novell, Inc.'s NetWare.

In a recent *Computerworld* survey, only about 5% of 102 corporate managers answered "Windows 98" when asked which operating environments will provide the greatest cost benefit over the next year. Compare that with the 41% of managers who cited Windows NT Workstation and 45% who answered Windows NT Server.

Corporations are banking on NT, even though NT 5.0 — which carries promises of helping with total cost of ownership (TCO) — won't be available for at least a year, and Windows 98 is here.

NT's selling point for corporations is simple: standards. Companies say standardizing on a platform reduces cost, and many say they are standardizing on NT 4.0 at both the server and the desktop. NT also packs the tools to lock down users' desktop machines, which means cost savings for information systems groups, the surveyed managers said.

"NT is a likely candidate to standardize on because it is both an application platform and a network operating system," says Bill Kirwin, vice president and research director at Gartner Group, Inc. in Stamford, Conn. He points out that NetWare is a very good network operating system, but it doesn't provide an application server-type platform. So, companies have to use NT, OS/2 or Unix, which create a more complex environment.

To determine how companies are cutting costs and to find out where costs are rising, Computerworld Information Management Group surveyed 102 corporate IS managers responsible for at least 250 desktops and laptops. We then conducted more in-depth interviews with 20 of those respondents to explore the reasons behind their answers.

Many respondents said they think NT Workstation helps decrease costs because it allows them to lock down desktop machines, which prohibits

NT lures IT, page 78

HIGHLIGHTS:

- Companies are standardizing on Windows NT Workstation and NT Server in hopes of reducing total cost of ownership (TCO).
- The majority of respondents say thin clients are ineffective at reducing TCO but would consider using them for specific applications.
- Software distribution tools and software management tools do cut down on support staff costs.
- Implementing and enforcing standards were the most frequently mentioned ways companies are reducing costs.

NT lures IT with CASH

CONTINUED FROM PAGE 77

users from changing the applications and configuration of their systems. That's done by using the built-in registry to manage end-user privileges, which cuts down on help desk calls. But analysts point out that you can do that with Windows 95 and Windows 98.

Other managers said the fact that NT Workstation and NT Server share a common interface simplifies the job for support staff. And that cuts costs.

Then there are those who said NT won't decrease costs over the next year. And pressure from the press, Microsoft, analysts and peers is pushing them to NT.

"I feel forced to increase our use of NT because of pressure from the industry," says John Sage, manager of technical support at the Advanced Financial Services Division of Aegon USA, Inc. in Largo, Fla. He says he will do it, but he is also making a strong commitment to NetWare 5.0. Sage says he likes NetWare's ease of administration, file-and-print services and performance, and he looks forward to the improvements in those areas that he's heard will be in NetWare 5.0.

For many of those begrudgingly moving to NT Server and NT Workstation, the immediate cost to upgrade — new hardware and training costs — not only wipes out any savings from a common interface and management features, but it also overshadows any potential long-term cost savings.

NT 5.0

Surprisingly, of those who said NT will save them money, few managers cited the pending release of NT 5.0 as the reason. Respondents said they felt that NT 5.0 was too far off to make that kind of judgment. "In my way of thinking, a product does not exist until it is in my hand," says Clifford Martin, IS manager at Matsushita Battery Industrial Corporation of America in Columbus, Ga.

It will be at least a year or two after the release of NT 5.0 before ABB Power T & D Co. in Raleigh, N.C., upgrades, says Monty Gay, manager of IS. "With 30 million lines of code, I can only imagine the problems that NT 5.0 is going to have right out of the gate," he says.

Citizens National Bank of Evansville isn't holding out for NT 5.0, either, says Tim Colvin, Internet and network manager at the Indiana bank. He's going to roll out a brand-new wide-area network over four states, and it will be NT 4.0. He doesn't want to wait.

Analysts say that even if NT 5.0 ships in the first half of 1999, users won't start seeing widespread adoption of 5.0 until after 2000. But when it arrives, it will offer a server-enforced way of controlling the desktop through a feature set called Zero Administration for Windows, which will help cut costs.

STANDARDS

In the survey, one of the most frequently mentioned causes of increased costs was application and environment complexity. The most frequently mentioned way to reduce costs was implementing standards.

Standardizing on NT simplifies life for Gay. NT

STANDARDS

Standards hold the key on costs

Survey respondents said that to reduce total cost of ownership, you have to say no to unnecessary software and hardware and yes to standard configurations.

And that's what many of the 22 of 102 survey respondents who have cut costs are doing.

And many of the 60 of survey respondents who said their total cost has increased in the last two years are also looking to standards to trim costs.

The reasons: With standards in place, technical support staffs don't find themselves bogged down with unfamiliar service problems, it takes less time to get PCs up and running and the entire systems environment is more stable and reliable.

Before establishing internal standards, the Louisville, Ky., law firm Wyatt, Tarrant & Combs couldn't turn away any support requests, says Douglas Barker, network support supervisor. Now it can. The firm won't handle support problems caused by unapproved software. "We are not having to learn things on the spot anymore," he says.

Standards also help save time during PC implementations. Bellcore, Inc. has come up with standard configurations; other than the addition of memory, no changes can be made to a configuration.

It used to take a week or two to get a PC up and running, says Larry Harrison, lead systems architect at Bellcore in Piscataway, N.J. Now, it's just a matter of plugging in a desktop and connecting it to the server. "Everything else is done, so it is a slam dunk," he says.

EARLY SAVINGS

Cost savings from standards can take place before the PC even comes through the door. Standard configurations — five desktops and two laptops — reduce costs for First Data Merchant Services in Melville, N.Y., starting with the manufacturer.

"We are able to negotiate with manufacturers to give us a good price based on the configurations," says Bill O'Connell, vice president of data systems.

"Standardization is a big area where you can cut costs," says Jill Baldassi, an information systems officer at Ridgewood Savings Bank in Ridgewood, N.Y. The bank has standard PC and server configurations, which make it easier to deploy applications, Baldassi says. "You don't need 50 different versions of a desktop suite to handle 50 different operating systems for you," she says.

Gartner Group, Inc. calls standardization a first-tier strategy. "It is a strategy that enables other strategies," says Bill Kirwin, vice president and research director. With standards, the environment will be stable enough to handle critical applications such as SAP or Baan as well as systems management tools. □

The majority of respondents said total cost of ownership has risen in two years

TCO	Number of respondents
Increased	60
Decreased	22
Remained the same	20
Don't know	102

Source: Computerworld survey

FACTOIDS

Of the 60 respondents who said **costs have increased**, one quarter said the increase is between 1% and 10%, and one-third said the increase is between 11% and 20%.

Nine respondents said **TCO has increased** by more than 40% at their organizations.

Of the 22 respondents who said their **TCO has decreased**, no one has lowered it more than 30%. Seven respondents said it has dropped between 1% and 10%. Seven said it is down between 11% and 20%, and six said they have saved between 21% and 30%. Two didn't know the amount they've saved.

Forty-one of 60 respondents with TCO increases said they are **"concerned" to "very concerned"** about the increases.

makes up 98% of his operating systems; he'a moved away from NetWare. His support staff works with the same interface on the workstation and server, which makes troubleshooting easier.

"Basically, we are jumping in bed with Microsoft, just like everybody else," Colvin says. The bank is getting rid of Lotus Development Corp.'a SmartSuite and Corel Corp.'a Quattro Pro, but the biggest change is its removal of Novell, Inc.'a GroupWise and Lotus' CC:Mail. That'a being done to reduce the oumber of vendors and software packages, Colvin explains.

Colvin is going to standardize his desktops on Microsoft products, such ss Exchange, NT and Windows 95. He says he can cut costs by locking down his NT workstations and Windows 95 desktops. The company also hopes to cut costs by installing a Microsoft Systems Management Server on NT for remote control, Colvin says. The bank hasn't used any software management tools before.

CONTROL AND COSTS

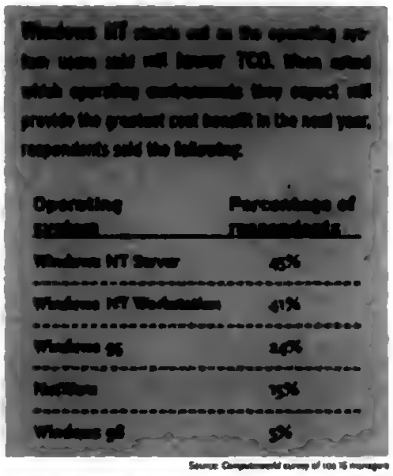
First Data Merchant Services also is turning to NT to decrease costs. The reason is the ability to exercise more control over the desktop, says Bill O'Connell, vice president of the unit of First Dats Corp. in Melville, N.Y. "ft is our belief that the more the user can change the desktop, the more costs will go up. The way to bring costs down is to control their ability to change things," he says.

Moving to a new platform is expensive. There are hardware, training and software costs. For many of the respondents, NT is an expensive proposition, and long-term savings don't mean much right now. They also question NT'a scalability and security, saying problems in any of those areas cost money. But industry pressure is leading them to NT.

Martin says NT won't lower his TCO during the next year. Martin'a training costs have gone up, and he had to purchase higher-powered hardware and upgrade application software to make use of NT. He says the only area in which there might he some lower cost is on the workstations. "I can decrease end-user tinkering, which in turn decreases help desk calls," he says.

Sage says NT on the server is increaaing his costs because its scalability isn't comparable to NetWare's. He says to deploy the same number of users on NT as NetWare would require more servers.

Another user fears NT'a security could end up costing him. "We don't think NT'a security is nearly as good [as NetWare's]. That, by itself, has the potential to raise the cost of ownership beyond any fathomable number for NT," says Douglas


Windows NT starts out as the operating system users said will lower TCO. When asked which operating environments they expect will provide the greatest cost benefit in the next year, respondents said the following:
Operating system
Percentage of respondents
Windows NT Server
45%
Windows NT Workstation
41%
Windows 95
24%
NetWare
15%
Windows 98
5%

Source: Computerworld survey of 102 IS managers

Barker, network support supervisor at Wyatt, Tarrant & Combs, a Louisville, Ky., law firm.

Kirwin stresses that NT may not cost less than other platforms; it is standardizing on a common technology that reduces costs. Mixed environments are more complex to manage, he says. □

Malloy is project editor for Computerworld Magazines Group.

THIN CLIENTS

Don't bank on thin client savings

Contrary to popular opinion, thin clients don't hold great promise in cost cutting, at least according to the 102 IT managers surveyed by *Computerworld*.

Only two survey respondents said they believe thin clients are very effective at reducing their overall cost of ownership. When asked to rank thin clients on a 1 (very ineffective) to 5 (very effective) scale, respondents gave an average rating of 2.24. Compare that with a 3.37 rating for systems management tools.

In follow-up interviews with 20 respondents, most said they understand the appeal of thin clients but only for very specific applications.

Although he has no plans to use thin clients, Stephen Kowalchuk, informatioo systems special project manager at Diamonex Performance Products, a unit of Monsanto Co. in Allentown, Pa., says using thin clients for shop floor work would he cost-effective because limited functionality is required.

> Thin clients score low on effectiveness at reducing total cost of ownership. Respondents gave thin clients a mean rating of 2.24 on a scale where 1 is very ineffective and 5 is very effective

What Kowalchuk and other respondeots said they won't consider is widespread use of thin clients as desktop replacements. Users' complaints, support issues and lack of thin-client applications were the key barriers cited.

IT managers say they don't think that thin clients, whether they are NetPCs, Windows-based terminals or Java network computers, will replace the desktop. They just aren't cost-effective, the managers say.

Based on the pricing seen by Larry Harrison, lead systems architect at Bellcore, Inc. in Piscataway, N.J., when you fully configure network computers to operate effectively, they are a dollar-for-dollar match with a PC.

"A [network computer] should cost half of what a PC costs and offer the same capabilities," Harrison says. Otherwise, it'a impossible to justify them to users, he says.

"I just think that the efficiencies you gain at the client end are lost at the server end," says Ron Hindt, manager of IS at St. Alexius Medical Center in Bismarck, N.D. With a thin-client strategy, he would need a more powerful server, so his costs would he transferred from the desktop to the server, he says.

"Real cost savings come from a well-managed overall environment," says Jack Gold, senior program director at Meta Group, Inc. in Stamford, Conn. □

NT lures IT, page 80

FACTOIDS

Savings from a managed PC (18%) are not far off from the savings from some of the network computer devices — Windows terminals (22%) and NetPC using Zero Administration for Windows (21%). In 2000, savings are projected to increase with Zero Administration for Windows. A NetPC running Zero Administration will save a company 25%.

Through 1999, 70% of network computers deployed will be used to replace terminals, to provide computing devices to users without a device and to replace older PCs that primarily perform terminal emulation.

Network computers won't replace PCs; rather, network computers and PCs will coexist in the enterprise for at least the next five years. Because of compelling cost/benefit factors, shipments of network computer-type devices will total 20% of all desktop units by 2002.

Source: Gartner Group, Inc., Stamford, Conn.

NT lures IT with CASH

CONTINUED FROM PAGE 79

ADVICE

TCO tips from the field

So lowering total cost of ownership (TCO) is important. But how do you do it? Survey respondents and analysts offered their opinions.

END-USER TRAINING
Give users access to training materials. Just-in-time training on an Ncube video server is in the pilot stage at Aegon USA, Inc.'s advanced financial services division in Largo, Fla. Its purpose: Employees won't have to rely on the help desk or leave the office for training, and they will be able to get training whenever they need it, says John Sage, manager of technical support.

"There should be a formalized structure in place to enforce training. When a new environment is rolled out, the number of support calls goes up for nontrained staff by at least 50% for the first two or three months. [Properly] training the end user can probably cut that in half," says Jack Gold, senior program director at Meta Group, Inc. in Stamford, Conn.

Use just-in-time training, which lets users receive training at the desktop as they need it, says Bill Kirwin, vice president at Gartner Group, Inc. He estimates that up to 30% of help desk calls are training questions. Intranets and CD multimedia training modules are core components. "If you don't train your end users, it does not make any difference if you have *Star Trek* technology. It is going to be expensive," he says.

What drives up TCO?
(Most frequently mentioned factors)

1. Complexity of applications
2. Time and cost of support staff
3. Cost of upgrades
4. Lack of internal standards
5. Hardware and software costs

How to trim TCO?
(Most frequently mentioned tactics)

1. Standardize on a platform
2. Purchase less expensive hardware
3. Provide end-user training
4. Use management tools

Source: Computerworld survey of 100 IS managers

HELP DESK
Give users centralized access to the help desk. "We recently implemented a help desk, so we have one number for people to call," says Tim Colvin, Internet and network manager at Citizens National Bank of Evansville in Indiana. Prior to setting up one number, end users got bounced from person to person.

Create a knowledge base of common problems. "If you can take an entry-level person and give him a repository of known problems and solutions, you can make him more effective," says Bill O'Connell, vice president of data systems at First Data Merchant Services in Melville, N.Y.

BUSINESS NEED
Make sure you can justify upgrades. "We don't upgrade until it is strategically important for us to do so," says Clifford Martin, information systems manager at Matsushita Battery Industrial Corporation of America in Columbus, Ga.

Don't upgrade until it is necessary. "It is wonderful to have gold-plated tools, but it makes no sense to have them if they do not add value," says Stephen Kowalchuk, IS special project manager at Diamonex Performance Products, a unit of Monsanto Co. in Allentown, Pa. If his business needs remain flat, he doesn't believe in upgrading to new technology. He says that to keep costs down, IT needs to be aligned with business goals.

CENTRALIZE/SIMPLIFY
Shift operations from the desktop to the server — servercentricity. Some ways to do that: Set up the server to automatically back up data rather than having end users do it on their own machines, shift some application functionality from the desktop to the server, distribute software from the server and manage the desktop from the server, according to Kirwin.

Limit the number of passwords. In a Fortune 1,000 company, it isn't unusual to have six or seven passwords for applications, the server and the network. Forgotten passwords result in downtime and help desk calls and can cost a 20,000-person company up to $4.4 million a year, says Carl Howe, director of computing strategies at Forrester Research, Inc. in Cambridge, Mass.

Ways to cut down on passwords: smart codes and digital certificates. □

MANAGEMENT

Management tools are an effective means of lowering TCO

	Mean*
Systems management tools	3.37
Software distribution tools	3.31

*Mean rating on a scale of 1 to 5, where 1 is very ineffective and 5 is very effective

Source: Computerworld survey of 100 IS managers

Trimming people costs

ABB Power T & D Co. has realized cost savings equivalent to one person. The Raleigh, N.C., company found that its support staff spent a lot of time walking from one PC user's desktop to the next as well as to and from its two office buildings. That time contributed to labor costs, says information systems manager Monty Gay.

To combat the problem, ABB Power put in a Microsoft Corp. Systems Management Server. Using the remote control and inventory features, ABB Power support staff can fix PC problems without leaving their desks.

Other survey respondents also said systems management and software distribution tools are saving them money by allowing administrators to manage PCs remotely.

Forty respondents said systems management tools are "effective" to "very effective" at reducing costs, and 46 respondents said the same about software distribution tools. Only two respondents said systems management tools are "very ineffective" at reducing cost, and five respondents said software distribution tools are "very ineffective" at reducing cost.

"Getting up and walking around is the highest cost of technical support," says Bill Kirwin, vice president and research director at Gartner Group, Inc. in Stamford, Conn. □

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ANALYSTS: NT savings may be a bit out of reach today

Windows NT Server 5.0 and NetWare 5.0

If total cost of ownership (TCO) is what counts, information technology managers shouldn't bet too heavily on Windows NT Server outclassing NetWare in the next year, according to industry analysts.

Essentially, Windows NT may be just catching up to NetWare. "The next generation of NT is going to do a little bit more TCO than the next generation of NetWare. The reason is that NT is still playing catch-up in terms of directory services to NetWare," says Michael Silver, senior research analyst at Gartner Group, Inc. in Stamford, Conn.

On the NetWare side, Progressive Strategies analyst Sergey Erastov says, "Novell addresses TCO issues by improving NetWare's scalability [through a multikernel operating system architecture and clustering], its manageability [centralized management using ConsoleOne and migration into pure IP environments], and its usability [bundling a five-user license for Oracle Corp.'s Oracle8 database with NetWare 5.0 and the Java Software Developer's Kit]."

Silver and Erastov spoke with *Computerworld* senior editor Cathleen Gagne about their observations on NetWare and NT Server's TCO improvements.

NT SERVER 5.0

Overall manageability

This will be much improved over NT Server 4.0. Improvements include Microsoft Management Console, Active Directory and Zero Administration for Windows.

— *Silver*

With Microsoft Management Console, you manage all BackOffice applications as snap-ins, and third-party vendors can write their own plug-ins.

— *Erastov*

Directory services

This is a big issue for larger enterprises. NT Server 4.0's domain is fine for workgroups and smaller enterprises, but it is not scalable for large enterprises. And the security is not granular enough for many midsize and large enterprises.

— *Silver*

Active Directory is definitely the main enhancement in 5.0. Therefore, the greatest impact on TCO is expected from this. [By dropping the old domain trust relationship model, the network administration burden will be eased dramatically.]

— *Erastov*

Software distribution

It will be provided by the IntelliMirror function of Zero Administration for Windows. It will also include remote boot for NT 5.0 workstations, which will also reduce TCO.

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Training

This is one of the biggest issues we see during NT Server implementations and may be compounded with the introduction of NT Server 5.0. Supply of experienced NT Server architects and technicians is way short of demands for the skill.

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Microsoft certified engineers will have to recertify. Also, NT 5.0 is expected to be considerably more cumbersome than 4.0 (about four times as many lines of code). Training and support will be a dog until Patch a or so.

— *Erastov*

User administration

That will be improved over NT 4.0 because of better tools and a more robust directory.

— *Silver*

Zero Administration for Windows is expected to provide client lock-down, server-side caching, etc. But clients must be upgraded to Windows 98 or Windows NT Workstation 5.0.

— *Erastov*

General comments

Other TCO improvements lie in better storage management with support for resource management and hierarchical storage management.

— *Silver*

Scalability issues should be addressed; clustering of more than two nodes that's available today.

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ZenWorks. Really cool stuff — a superset of NAL and NT Workstation Manager.

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Hardware resources needed

NetWare 5.0 may need more powerful hardware than NetWare 4.0, but we don't expect a very large increase in the requirements.

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Amazingly, at Brainshare '98, Novell demonstrated a new file system for NetWare 5.0. With 32M bytes of RAM, a 1T-byte volume can be mounted in less than 10 seconds.

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General comments

The most compelling feature for enterprises in NetWare 5.0 will be native IP, which will allow them to remove IPX from networks.

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ON THE DESKTOP

TCO outlooks on NT Workstation 5.0, Windows 98

Computerworld asked Michael Gartenberg, research director at Gartner Group, Inc. in Stamford, Conn., how Microsoft's NT Workstation 5.0 and Windows 98 will help users reduce TCO.

Yet before Gartenberg would talk about the operating systems specifically, he wanted to make it clear that you can't look at just the technology to get TCO reduction.

"TCO is about a philosophy of management," he says. "To us, that's critical, because if you take NT 5.0 or NT 4.0, Windows 98 or Windows 95, and you're deploying them without a philosophy of management and control behind it, you won't see any TCO reduction at all."

That philosophy, he says, is based on a simple notion. "Complexity is expensive. The more complex my environment is, the more costly it's going to be," Gartenberg says.

"So having said that, NT 5.0 is looking very nice from a TCO perspective, simply because it offers more of the management technologies right out of the box," he says.

Gartenberg says of Windows 98, heir to Windows 95, "Better management technology processes are available. Not quite as good as those of NT 5.0, and of course, not available right out of the box."

Gartenberg also offers some projected statistics: "We project that the TCO of NT 5.0 against base Windows 95 will be about 25% to 27% cheaper. Meaning if you deploy NT 5.0 and you deploy the manageability capabilities it has right out of the box, you can get a 25% to 27% TCO reduction.

"On the other hand, if you take Windows 98 out of the box and then you apply some third-party tools and management philosophies, you can get as much as a 26% TCO reduction over base Windows 95. The key again isn't the technology; it's the fact that it's the management philosophy."

— *Cathleen Gagne*

ANALYSTS: NT savings may be a bit out of reach today

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- New Dell Products Powered by These Technologies
- Direct Service
- Solutions Built on Leading Network Applications

11:00-12:00
Solution Sessions
Decide which educational session suits your business (select one)
- Making Better Decisions using Oracle Applications (Datamarts)
- Streamlining a Business with the Internet and E-Commerce

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26	Airport Renaissance, Los Angeles, CA
29	Renaissance Dallas, Dallas, TX

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08	Grand Hyatt, New York, NY
10	Capital Hilton, Washington DC
13	Westin Waltham, Waltham, MA
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IT Careers

BETTER PAID & SHORT CHA

IT salaries skyrocketed in the past year. But more money is just the beginning of what IT pros want now

BY CLAIRE TRISTRAM

First, the good news: Your salaries rose an average rate of 10% last year. That said, you'd still like more money. And you also tell us that that is just the beginning.

You want jobs that offer an intellectual challenge in addition to a good paycheck.

You want access to training to keep your job skills honed and your career marketable.

You want to feel as if you make a difference at work, but you also want the freedom to pursue interests outside of work.

Those needs have emerged as the new compensation challenges to get, and keep, information technology pros.

Survey results tell only part of the story. The other part has a human face. Sure, everyone knows IT managers are digging deeper and paying steeper salaries. But are they paying enough as far as their employees are concerned? Are companies merely playing catch-up, after years of payroll neglect? Are they paying an honest wage for an honest day's work? Or have they gone too far in this gold rush?

To find out, we recently surveyed more than 500 IT professionals on their thoughts about salary and job satisfaction issues. Then we picked random IT pros to call for follow-up interviews. Our only filter was that we wanted to interview technical staff members, rather than managers, about their feelings on compensation.

You told us you still want more money. But you also told us things that surprised us. You said you'd trade a big bonus for the chance to live where you want, or to ride your bicycle to work, or to participate in projects that you find intellectually challenging.

You told us that you've also reached a level of compensation where you're beginning to think of more than the percentage points of your next salary increase. Now you want something money can't buy.

"Compensation is more than just money," says John Hull, database administrator at MedImpact Healthcare Systems, Inc. in San Diego. "I work at a company that has a great willingness to invest in the latest technology. I'm having a great time using the latest products. My work is intellectually challenging. All of those things matter to me at least as much as my paycheck."

Hull is aware that his salary is at the lower end of the range given in various salary surveys for someone with his skills. And he plans to ask for a raise soon — with a clear understanding of the trade-offs he might be making.

"The term 'salary' and what it represents has changed over time," Hull says. "Your salary used to be compensation for a 40-hour work week. Maybe as a result of downsizing, there's a tendency for employers to expect more time from employees in exchange for the salary increase, until we're expected to be available 24 hours a day, seven days a week. There's a trade-off between more money and more time."

Also in this section our Hot Skills Report

NO SATISFACTION

Approximately half of the IT professionals we spoke to have recently received unexpected midyear salary increases as a result of employers attempting to adjust internal salaries to the market rate. But the windfall, while welcome, still leaves some less than satisfied.

Marcy Brown, technical support analyst at Hagerstown, Md.-based utility Allegheny Power, recently received just such a large salary boost. The increase came after her company completed a regional survey comparing internal salaries with prevailing market rates.

After the survey was completed, Brown found herself in a job classification where she was eligible for an immediate salary increase of 12%, followed by as much as a 9% annual increase for the next several years. But she says she'd work for less money if her job provided more intellectual challenge.

"If I were to leave the company and go look for another job tomorrow, I don't think I could match my salary," Brown says. "But if you're going to pay me this money, then give me the responsibility to go along with it. I realize this might just be the way I feel, and others may not. I have friends in technical jobs who won't consider staying in a job unless they can expect increases of 15% or more a year."

Spartan Stores, Inc. in Grand Rapids, Mich., has also just completed a midyear salary adjustment for its IS employees, in part to stem the tide of experienced IT employees seeking better wages elsewhere. But according to Peter Walen, senior information analyst at Spartan, the extra money can't completely compensate for the added burden now placed on remaining employees.

"It was a nice bonus," acknowledges Walen. "Our salaries went up significantly. But we're spread very thin in the department. I think the ability to take two or three days off, or to have some flexibility in our scheduling, is as least as important as an extra few dollars in our paychecks."

Some of you value flexibility so

NGED

much that you've become independent contractors — and not just for the money. Oh sure, the pay certainly can be better than salaried work. But many of you recent contractor converts have done so for the freedom it gives you to work when and how you want.

"I felt less and less free to do good work when I was working for a corporation," says Ron Fischer, independent consultant and founder of San Francisco-based The Digital Actors Co. "In a big company environment, I found that three-quarters of software projects were canceled before completion. When I think about my compensation goals, they are broader than just salary. I also want an employment situation where I have well-defined goals and where I work with people who know what they want and how to get it done. Contracting, by its very nature, gives me that."

Fischer has 20 years' experience as a Silicon Valley programmer and engineer. And he knows he's fortunate to work in a part of the country where employers are feeling the shortage of skilled IS professionals most acutely: $100 to $150 per hour contracts are usually just a few phone calls away.

"You can make more money in a given period of time with contracting," Fischer says. "That gives you the freedom to take time off at given intervals and go after your own projects, what you really want to do. I think of it like a sabbatical," Fischer says. It's not terribly risky, because his skills are so marketable. "With my background, I can always go to a headhunter and have a job the next day."

Of the IT pros we contacted, Wayne Frens, a programmer/analyst at Alpena General Hospital in Alpena, Mich., has made perhaps the greatest effort to translate his marketable skills. That means lifestyle choices that make sense for him.

After 15 years of high-pressure jobs in Detroit and other cities, Frens recently moved to the upper peninsula of Michigan. His new compensation "benefits" include such things as being able to canoe outside his back door and to bicycle to work. He and his wife are in the process of building a log home.

"You have to know what your own idea of paradise is," Frens says. "I have skills that allow me to work and live where I want. I really have no desire to strive for the almighty dollar."

Among the IT pros we called for this story, we found more log-home builders than corporate climbers. We make no claims that these professionals reflect the feelings of our readers as a whole. If we talked to others, we might have a very different story to tell.

But this particular group of computer professionals told us over and over again that for now, you have (close to) enough money. And you want freedom to live where you want, to balance work with other needs, and to explore intellectual challenges that you're excited about. □

Tristram is a freelance writer in San Jose, Calif.

COMPUTERWORLD'S Report Card ON IT Compensation

HOW YOU FEEL ABOUT YOUR SALARY

Men are happier (more women are unhappy)

SATISFACTION LEVEL	WOMEN	MEN
Very satisfied	11%	17%
Somewhat satisfied	13%	40%
Neither satisfied nor dissatisfied	35%	17%
Somewhat dissatisfied	29%	20%
Very dissatisfied	12%	6%

It gets better with age (but not much)

SATISFACTION LEVEL	UNDER AGE 35	AGE 35-44	AGE 45-54	AGE 55 AND UP
Very satisfied	10%	16%	18%	15%
Somewhat satisfied	39%	39%	38%	46%
Neither satisfied nor dissatisfied	18%	13%	18%	17%
Somewhat dissatisfied	25%	24%	22%	12%
Very dissatisfied	8%	8%	6%	10%

Source: 562 IT professionals and managers

HOW YOU FEEL ABOUT YOUR PAY VS. PERFORMANCE

Hell hath no fury . . .

SATISFACTION LEVEL	WOMEN	MEN
Very satisfied	7%	14%
Somewhat satisfied	29%	32%
Neither satisfied nor dissatisfied	13%	19%
Somewhat dissatisfied	33%	26%
Very dissatisfied	18%	9%

Worth your weight in more gold

SATISFACTION LEVEL	UNDER AGE 35	AGE 35-44	AGE 45-54	AGE 55 AND UP
Very satisfied	11%	12%	15%	15%
Somewhat satisfied	29%	30%	32%	46%
Neither satisfied or dissatisfied	25%	14%	16%	17%
Somewhat dissatisfied	28%	32%	26%	12%
Very dissatisfied	7%	12%	11%	10%

Source: 562 IT professionals and managers

HOW IMPORTANT IS MONEY TO YOU?

Salary increase WOULD improve job satisfaction*	60%
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Source: 562 IT professionals and managers *(Most cited factor)

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Hot Skills REPORT

THE TOP SKILL

The hottest IT job market in history keeps setting off the same alarms

BY ALICE LAPLANTE

Want a forecast of the really [illegible] for the summer? Quite simp[illegible]more of the same.

Anyon[illegible] even a smidgen of C++, Visu[illegible], Windows NT or Java develo[illegible] experience is still being coun[illegible] by dozens of eager would-be c[illegible]ers.

Do [illegible] SAP? Baan? People[illegible] sit back and watch the Fortune 1,000 get in line to grab your expertise as they install these packaged enterprise applications in increasing numbers. Even old-time Cobol programmers should have no trouble lining up lucrative last-minute year 2000 work (assuming they want it, which many say they don't, thank you very much).

And not surprisingly, when companies find any of the resources they need, they're willing to pay more.

Paul Eichhorn, a systems manager at DeSaulniers Macleod, a Chicago-based information technology placement firm that serves the Fortune 100, says skilled workers with Unix, C++ or Visual Basic skills still command up to a 20% salary premium in pay on new job openings. (A salary premium is the amount paid for having a specific skill, above what the job normally pays without that skill.)

"They're hard to find," Eichhorn acknowledges. "Skilled workers have a lot of options these days."

Which continues to give many IT employers fewer options. Although CUNA Mutual is fortunate enough to be situated in a college town with a top-notch computer science department — the University of Wisconsin at Madison — that doesn't necessarily lead to an easy college recruiting effort. The problem is that the local graduates are *too* highly rated.

"We pretty much have to go elsewhere for recruiting because the Madison graduates are snapped up by IBM and Microsoft," says Chris Pauer, manager of IT skills development at CUNA Mutual Group in Madison.

Lillie Ellison can attest to that. As owner of the Employment Technology and Solutions Group, a technology search firm in San Francisco, she says, "We're all vying for the same people."

Making matters worse, with such low unemployment, the best candidates are already working and aren't really in the job market. That is putting pressure on companies to hire those who are in the job market at higher rates than wanted, with fewer skills than needed, or with a combination of the two.

As a senior associate at the electronic data processing practice at Source Services in Vienna, Va., an IT recruiting organization, Laura McCarthy is seeing kids straight out of college with MIS and computer science degrees commanding salaries in the high $40,000 range and above. Workers with 10 or more years of experience easily find six-figure salaries.

"I've seen salaries just escalating, and I don't see an end in sight, although it has to tail off sometime. It just has to. Eventually, people will refuse to pay," says Michael McGowen, a principal at New Resources Corp., an IT management consulting firm in Atlanta. Many already are realizing that the better investment is holding on to the skills you already have on staff.

SKILLS TO BANK ON

IT hiring managers say these are the skills they need most

Internet skills	HTML, Java
Languages	C++, Cobol, C
Development tools	Visual Basic, Visual C++, PowerBuilder
Networking	TCP/IP
DBMS and RDBMS	Oracle, DB2, Microsoft SQL Server
Operating systems	Windows NT, Windows 95, Unix
LAN administrators	Windows NT Server, Novell NetWare
Office/E-mail	Microsoft Exchange, Lotus Notes
Client/server applications	Oracle
System support	Year 2000, help desk, data warehousing

Source: 542 IS managers in Computerworld's Annual Skills Survey

RETENTION: START WITH R-E-S-P-E-C-T

IT pros say fairness, training and responsibility are worth their weight in gold

Steve Morris is probably one of the calmer IT managers you'll find today, at least when he's talking about hiring technology talent.

As manager of information systems and technology at global technology firm Gemini Consulting, Inc., his IT staff has been stable since November. "We've been very, very lucky in that we've virtually eliminated attrition in our ranks," says Morris, who runs Gemini's North American IT organization in Morristown, N.J.

Of course, luck has nothing to do

PETER DRESLING

with it. That, Morris will readily acknowledge.

Instead, Morris goes to great lengths to provide IT workers with varied, challenging assignments and a smorgasbord of training opportunities — in-house, third-party and vendor-provided educational programs alike.

Perhaps most important, Morris keeps his workers in constant flux between applications and operations groups. The result: "Cross-training takes place not only on different technologies, but different roles on the IT team," Morris says.

Ashok Bakhshi couldn't agree with that practice more. As manager of applications systems development at Schindler Elevator Co., also in Morristown, Bakhshi is always on the lookout for workers who are skilled in Visual Basic and SAP.

How do you find and retain such highly sought-after people — who can, after all, write their employment ticket to virtually anywhere in the world? By doing four things, Bakhshi says:

- Provide them with challenging technical opportunities.
- Trust them with increasing responsibility for various aspects of projects.
- Offer ample training and educational options.
- Allow for flexible work schedules that fit employees' individual lifestyle requirements.

"And of course, we pay them fairly. Not necessarily the highest salary they could get if they looked. But fairly. And if you do everything else right, that's usually enough," Bakhshi says.

It doesn't hurt to make employees feel nurtured.

At CUNA Mutual, Pauer points out that his company is competing for IT talent in not only a nationally competitive environment, but also a *local* economy that has a less than a% unemployment rate across the board. "And for IT, it's actually a negative unemployment rate because Madison is home to some big IT employers such as Oscar Mayer, American Family Insurance and Lands' End," he notes.

What's an IT manager to do? Treat your internal workers very, very nicely. Post all positions internally — and give insiders a shot at getting the really interesting ones, even if it means training them in new skills. In 1995, CUNA Mutual established "competency centers" with precisely that goal in mind: to take existing IT workers and put them through a three-month boot camp on emerging technologies such as groupware, Internet development and object technologies.

TO HAVE . . .

IT hiring managers say they are doing the following to retain current staff

Increasing training	39%
Increasing salaries and reviews	27%
Increasing total compensation offerings	17%
Offering access to new technologies	9%
Running incentive programs	9%
Broadening IT positions and responsibilities	8%

Source: 270 IS managers in Computerworld's Annual Hiring Forecast

. . . AND TO HOLD

IT professionals say they want the following to be happier on the job

Salary increases	60%
Performance bonuses	51%
Opportunities for advancement	38%
Clearly defined roles and responsibilities	38%
Increased training	37%
Clearly defined decision-making authority	35%
Access to new technologies	35%

Source: 562 IS professionals in Computerworld's Annual Job Satisfaction Survey

ALL THAT GLITTERS

Salaries aside, IT pros rank the following as the most important factors in taking a new job

1. More challenging work assignment
2. Technology direction of IS department
3. Ability to use new technologies
4. Quality of boss
5. Financial success of the company

Source: 562 IS professionals in Computerworld's Annual Job Satisfaction Survey

RECRUITING: CAN'T BUY ME LOVE

Salaries have risen dramatically, so it takes more than cash to lure IT talent now

Throwing money into the market isn't a panacea for filling those empty IT cubicles.

So when recruiter McCarthy calls prospective employees, she finds that mentioning the salary first isn't the wisest option.

"I don't call someone and say, 'Hey, I've got a job paying X amount,' " McCarthy says. "That doesn't work anymore." Instead, she gives the details of the technology, the assignment and the responsibilities. "That's what will hook them," she says.

And sticking to the traditional ways of finding talent simply doesn't work anymore, IT hiring managers and recruiters say.

"That's why people are turning to the Internet. It's why you organize job fairs, join professional networking associations and continually work on developing a community of technical people that you can tap into," says Michael Hall, president of Personnel Strategies, Inc. (PSI), a Minneapolis-based IT recruitment consulting firm.

CUNA Mutual has created a dedicated "hiring squad" within the IT department that is constantly scouting for new talent. Even now, when CUNA — temporarily — has filled all its technology positions, the squad stays alert, combing the Internet, local job fairs and of course college campuses for potential talent. "You have to stay vigilant," Pauer says

PSI regularly surveys IT workers to determine why people stay and why people leave. "The surveys tell us that people switch jobs for a number of reasons other than money. Career path and personal growth are the two critical ones," Hall says.

Woe to the IT manager whose employees feel they are being left behind in terms of the technology they are working on and the skills they are acquiring. You are "in much greater risk of losing them than if you're not paying enough," Hall says.

One increasingly attractive option is to hire eager IT wanna-bes, Ellison says. "Today is a great time for non-technologists to try and switch into a technical career, because some companies are so desperate they don't care if someone is fairly green. As long as a candidate has some rudimentary knowledge, and the right attitude and enthusiasm, they'll get hired." □

LaPlante is a freelance writer in Woodside, Calif.

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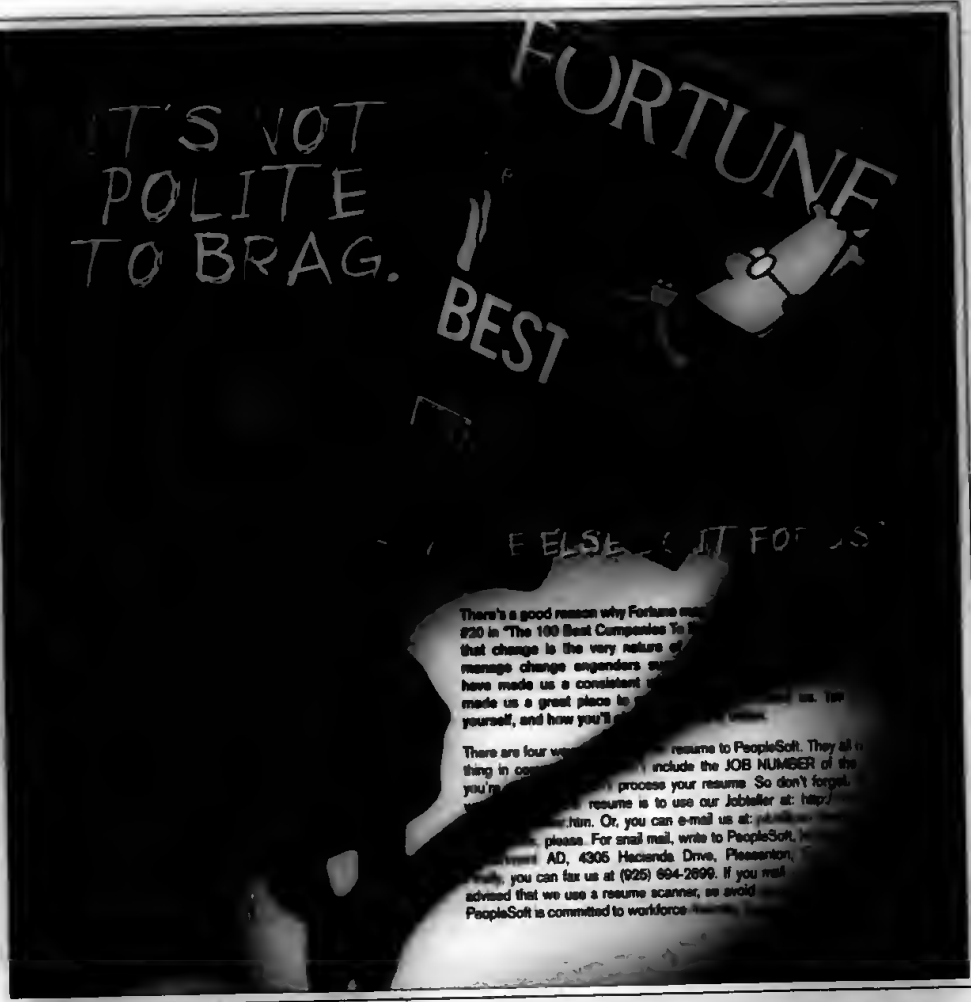

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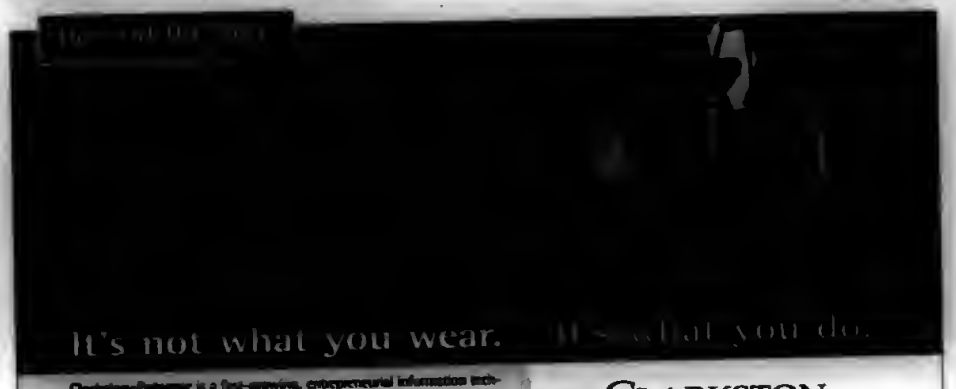

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You'll be responsible for release scheduling, tracking resource assignments, creating software processes, ensuring that the established processes are adhered to, reporting software project status, and ensuring concurrence at the design and implementation stages of development. Requires several years of increasingly more responsible software engineering experience - including demonstrated Project Management experience to Windows development environments - and a degree in Computer Science or MIS.

Software Engineers

We're seeking experienced software professionals to design, code, test and debug system programs, as well as install and support vendor-developed systems software while providing technical support to Applications Development. You'll need a degree in Computer Science, MIS or equivalent, technical knowledge of Windows platforms, and programming knowledge in one or more of the following: Visual Basic, C/C++, SQL.

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You'll help create automated test procedures using SQA and other state-of-the-art testing tools. You'll also ensure readiness of technical deliverables of our software through automated procedures. Prior experience in software testing within a development environment and an undergraduate degree in Computer Science or MIS (or equivalent) are required.

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You will work in a highly charged environment to provide timely and mission critical support to end-users and Solomon's Channel Partners in the areas of Financial Applications, Networking, Hardware, etc., by responding to telephone, fax and/or email inquiries. Technical Support offers a wide variety of experiences and exposure to all aspects of the Solomon Software application, and we are committed to providing training for employees to empower them to perform their jobs well and professionally. Requires a 2-4 year degree in Business/MIS, Customer Service, Accounting or related experience. Beneficial skills include an Accounting background and previous experience with Windows 95, Novell NetWare, Windows NT, or Microsoft SQL Server.

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You will be responsible for identifying and preparing reports to assist in the management of the division, coordinating the annual budgeting process, reviewing revisions to monthly financial statements and supervising assigned staff. Requirements include a 4-year degree in Business, Finance, Accounting, or equivalent experience, knowledge of Statistical Analysis tools, a high proficiency with Windows-based software including Word and Excel, and the ability to work independently or to a team. Prior experience with Call Center Operations Management, Telecommunications and budgeting is preferred.

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Director IT Project Manager

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Technical Analyst Unix Administrator

City Utilities of Springfield, Missouri, has an immediate opening for Technical Analyst - Unix Administrator in the Information Technology field. Successful candidates should possess a B.S. in Computer Information Systems, Business, Computer Science, Mathematics, or related degree. Must have six years of recent, progressively responsible Information Technology experience with four years related to Systems Administration. Prefer experience with HPUX operating system on large server. This position functions as a UNIX administrator. Responsibilities include installation, configuration, and management of operating systems including HPUX and OSF1. Will be responsible for software delivery and license management.

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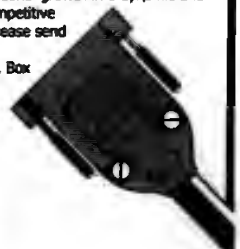

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Unix System Administrator to install Unix & computer networking hardware/software, perform circuit board level hardware maintenance, Unix systems administration activities & computer network administration & management; configure, manage & support Unix machines; install configure & update third party software; analyze & correct network performance problems; setup & configure computer network & multi-vendor modems; monitor & troubleshoot system security problems, support new software, maintain database of all hardware/software problems on network; setup & support e-mail; support, administer & maintain HP-UX & Solaris, use network monitoring software NVDM, ADSM & Netview/6000 on HP 9000 SUN Sparc & UNIX machines; Regs. Bach. in Comp. Sci., Computer Electrical or Electronics Engg., Comp. Info. Systems, Systems Analysis or its foreign educ. equiv., 3 yrs exp in job offered or 3 yrs related exp such as Unix & Network Admin. or IT Engr. Related exp must include, in whole or part, administration, maintenance & support of Unix, HP & SUN Sparc systems; configuring & troubleshooting SUN & ADSM work stations & using network monitoring software such as Netview/6000 & NVDM. $64,085/yr, 40 hrs/wk, 8a-5p. Send resume to Illinois Dept. of Employment Security, 401 S. State St. - 7 North, Chicago, IL 60605, Attn: Janet Aschenbrenner, Ref #V-IL 17498-A "Employer Paid Ad"

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SOFTWARE ENGINEER needed F/T for NJ Comp Service Co. Must have & mos exp dsgng, dvlpng & implementing of sys & applic s/ware using C/C++ & PASCAL under real time & MS Windows operating sys w/communications protocols incl X-MODEM Master's in Comp Sci or Comp Engg needed. Respond to: Murchhana Mohapatra, Manager HR, Dept. GR11, Horizon Computers, Inc., 5 Lincoln Highway, Edison, NJ 08820.

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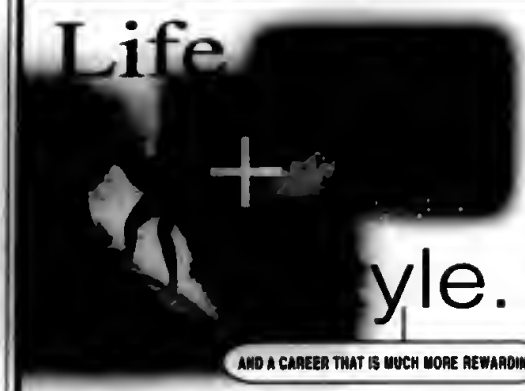

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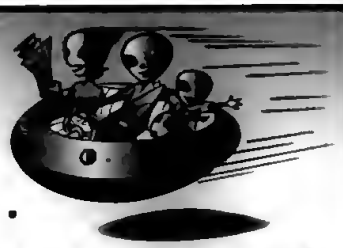

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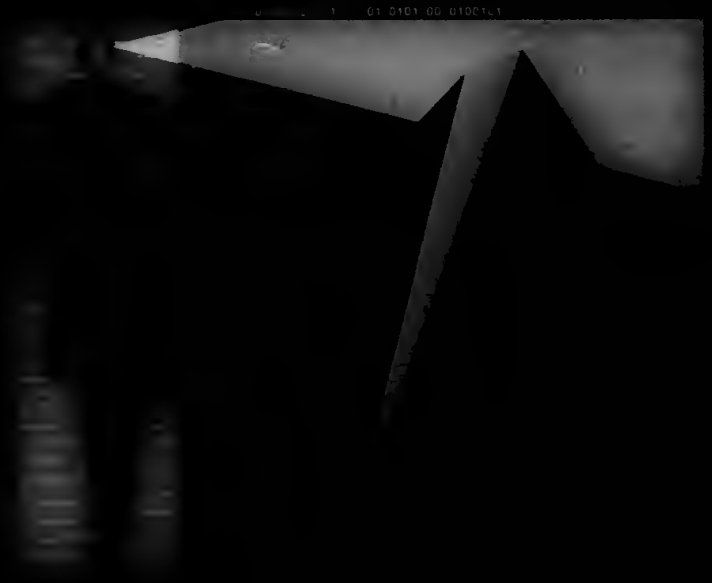

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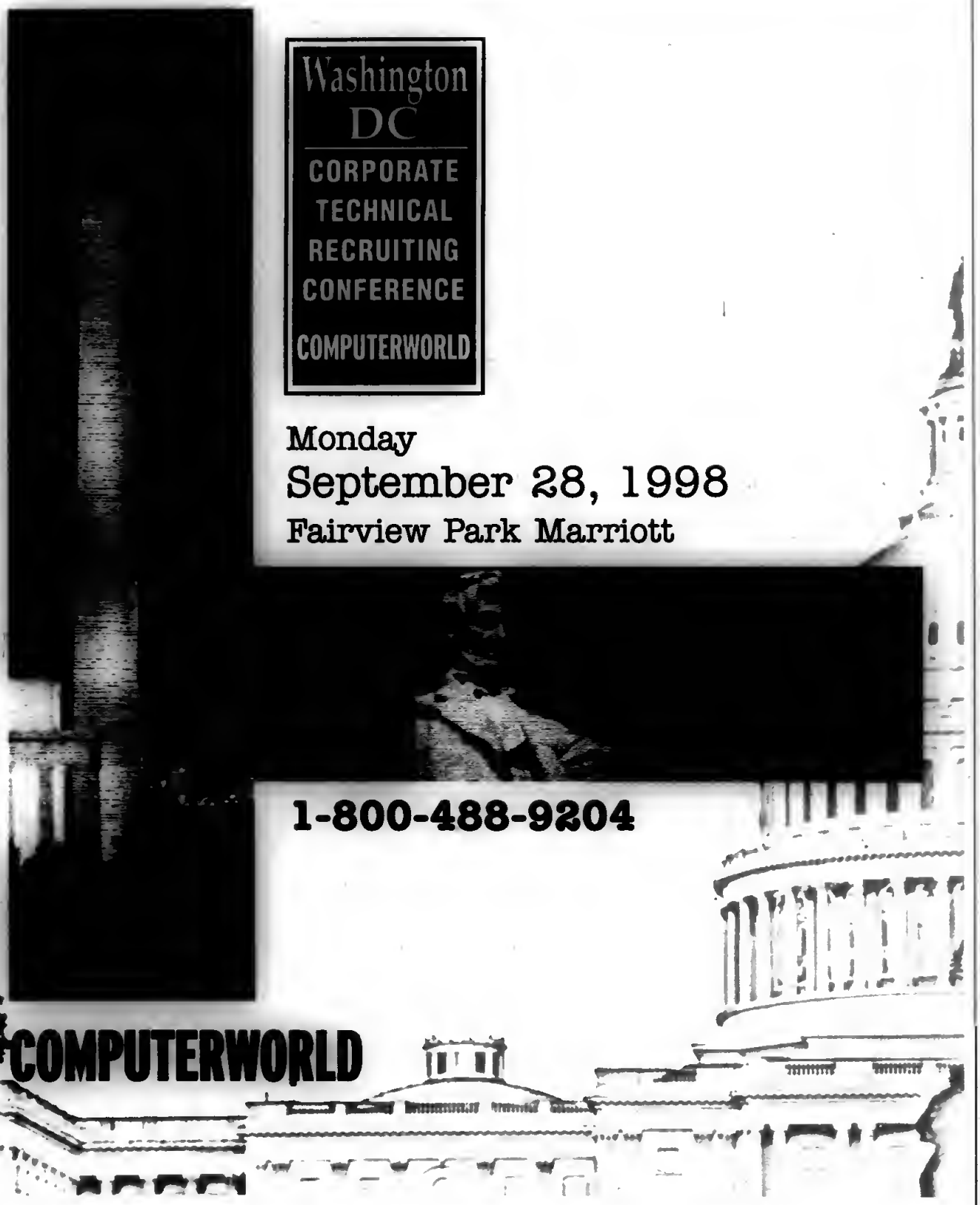
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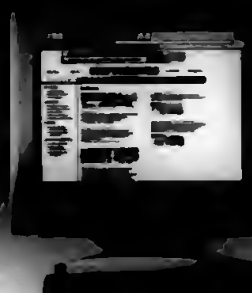

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Analysts: Buy Intel

If there ever was a clear-cut case of when you should "buy low," chip maker Intel Corp. is it, analysts say. The Santa Clara, Calif.-based company, target of a Federal Trade Commission (FTC) antitrust lawsuit, has seen its stock drop from a high of $101 on Aug. 20 of last year, to just under $70 earlier this month.

Michael Murphy, an analyst at the California Technology Stock Letter in Half Moon Bay, Calif., says Intel's recent stock decline wasn't a surprise. In November, Intel officials told analysts its shift to the Pentium II was partly to blame. Assembling Pentium II modules from components such as static RAM cuts into profit margins, officials said.

A PC market slowdown also hit Intel's stock, says Joe Moore, an analyst at Goldman Sachs Co. in New York. Moore cites a glut of corporate PCs and consumers delaying purchases until the release of Microsoft Corp.'s Windows 98.

In spite of the downturn, the FTC suit and disappointing results in the company's recent quarter ($1.3 billion in net income, down 35% from the same quarter last year), analysts see a bright future for Intel.

Three analysts — Moore, Murphy and David Wu, at ABN AMRO in San Francisco — rate Intel as a Strong Buy and expect an upturn in the second half of the year.

The FTC suit "certainly won't go to the core of their business," Murphy says. "Intel is not Microsoft. It has been very conciliatory and is negotiating like mad to come out of this FTC issue."

Murphy expects Intel's stock to rebound in $75 to $80 per share in the quarter ending in September as shipments increase before the Christmas season. And he says it should reach $120 by the end of the second quarter next year. Moore predicts the stock will reach $90 to $100 by this time next year. — Tom Diederich

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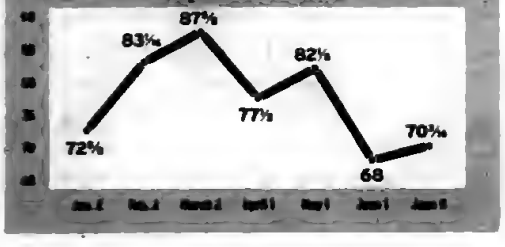
Analysts say Intel stock, now near $70 per share, could pass $100 next year.



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COMS	30.88	22.94	3 COM Corp	23.88	-2.87	10.5
AIT	88.25	88.11	AMERITECH Corp	41.88	0.06	0.1
ASND	38.75	22.06	Ascend Communications	48.88	2.88	0.8
T	68.50	34.06	AT & T	62.81	0.81	1.3
BWIN	13.50	1.75	Boston Systems Inc.	7.06	-0.88	-0.9
BAY	41.88	21.38	Bay Networks Inc	27.69	2.81	9.2
BEL	108.88	68.88	Bell Atlantic Corp	99.13	1.63	1.7
BLS	68.38	48.31	Bellsouth Corp	67.81	-0.88	-0.1
BRKT	22.75	9.25	Brooktrout Technology	15.75	-0.88	5.3
CS	38.50	11.44	Cabletron Systems	12.06	-0.88	-0.5
CCBN	21.88	8.56	Cambridge Communications	11.88	-0.75	1.9
CSCO	61.50	41.69	Cisco Systems Inc	58.06	2.13	2.8
CMNT	6.13	1.31	Computer Network Tech	5.19	-0.38	-0.7
CNCX	30.06	7.88	Concentric Network Corp	23.06	0.13	0.5
DIGI	32.75	16.50	DSC Communications	27.38	1.50	5.3
FORE	24.06	13.25	FORE Systems Inc	22.44	0.63	2.9
GDC	6.88	3.25	General Datacomm Indu	3.88	-0.88	11.4
GSX	53.88	38.63	General Signal Networks	49.38	2.38	4.8
GTE	64.19	48.38	GTE Corp	56.63	2.19	3.7
LU	79.06	32.66	Lucent Tech	72.19	-0.63	-0.9
MADGF	9.19	3.25 *	Madge Networks NV	4.44	-0.56	11.3
MCIC	54.38	27.31	MCI Communications Corp	48.19	1.06	6.0
NETM	5.25	2.09	NetManage Inc	3.13	-0.16	-4.8
NTBR	3.50	0.63	Netter Corp	2.50	-0.94	14.9
NCDN	14.19	3.88	Network Computing Devices	7.06	-0.06	1.2
NWK	22.38	11.50	Network Equipment Tech	16.56	0.88	3.8
NN	69.38	18.94	Newbridge Networks Corp	22.25	1.56	-13.8
NT	69.25	39.63	Nortel Networks Corp	63.31	0.38	0.8
NOVL	12.63	8.38	Novell Inc (H)	11.63	0.72	6.6
ODSI	14.50	5.19	Optical Data Systems Inc.	6.88	-0.88	10.2
PCTL	11.88	5.63	Picturetel Corp	7.94	-0.31	3.8
PTON	3.50	0.97	Proxicom Inc.	1.06	-0.06	7.9
RACO	4.13	1.06	Racotek Inc	2.88	-0.13	-4.2
RADS	29.38	13.63	Radiant Systems Inc. (L)	10.88	2.94	14.6
RTEL	11.63	5.00	Retix	5.25	-0.06	1.2
SBC	46.50	38.75	SBC Communications	38.44	1.50	3.7
SFA	26.13	14.00	Scientific Atlanta Inc	21.00	-2.13	5.3
SHVA	16.44	8.88	Shiva Corp.	8.13	-0.75	-8.5
SUNW	75.63	44.88	Sunnet Corp	70.50	1.88	1.5
QWST	41.06	13.19	Qwest Communications Int	Inc. 40.06	1.06	3.3
SMSC	18.13	8.00	Standard Microsystems Corp	15.25	-0.63	5.7
USW	38.88	33.38	U S West Inc.	38.25	-0.13	-0.2
XIRC	18.06	5.63	Xircom	14.50	-0.25	1.7
XYLN	31.25	13.88	Xylan Corp	23.87	7.94	7.5
PERSONAL COMPUTERS						
AAPL	31.63	12.75	Apple Computer Inc	27.88	1.38	5.3
CPQ	19.75	14.11	Compaq Computer Corp	18.06	0.88	0.2
DELL	88.50	58.69	Dell Computer Corp	81.19	1.63	2.0
GTW	59.25	25.06	Gateway 2000 Inc.	47.06	-0.06	0.1
HWP	82.38	31.81	Hewlett Packard Co	60.25	2.19	3.5
MUEI	21.00	8.44	Micron Interchange Inc.	11.56	-0.44	-3.6
NIPNY	34.00	43.88	NEC America (L)	43.88	3.06	7.1
SGI	40.31	20.94	Silicon Graphics	31.63	0.13	1.1
SUNW	55.31	46.38	Sun Microsystems Inc	42.00	2.88	6.0
COMPUTER SERVICES						
DGN	37.94	16.38	Data General Corp	15.25	-0.25	1.6
DEC	63.63	33.88	Digital Equipment Corp	58.88	0.50	0.9
IBM	129.31	81.50	IBM	115.38	1.50	1.3
MDTD	8.63	3.13	Meridian Data Inc.	8.88	-0.28	5.7
NCR	38.50	25.63	NCR Corp	33.44	-0.06	7.1
PRCM	18.63	6.75	ProCom Technology Inc	6.88	-0.50	7.6
SQNT	11.25	15.06	Sequent Computer Sys	10.00	1.88	9.1
TXN	68.31	2.50	Texas Micro Inc	3.63	0.06	0.0
SRA	60.75	11.00	Stratus Computer Inc	15.63	2.11	-3.9
UIS	88.75	6.75	Unisys Corp	21.75	0.38	2.3
SOFTWARE						
ADBE	53.13	33.88	Adobe Systems Inc	88.88	0.88	0.0
AMSWA	15.63	6.88	American Software Inc.	7.63	0.56	4.7
APLX	12.50	3.88	Aplix Inc	4.06	-0.44	-9.9
ASAP	51.25	27.19	Asap Software	31.63	2.00	5.9
ARDT	15.88	8.63	Ardent Software	11.88	0.25	2.2
ASFC	36.88	17.75	Asta Corp	27.13	-0.25	-0.9
ADSX	51.13	28.50	Autodesk Inc	42.25	0.13	0.3
BMCS	51.50	25.06	BMC Software Inc (H)	44.75	-4.81	-9.7
BOOL	28.06	13.94	Boole and Babbage	25.06	1.25	5.3
BOBJY	20.06	6.81	Business Objects	15.38	1.63	11.8
CAYN	4.25	0.94	Cayenne Software Inc	1.38	-0.44	22.8
CNTR	2.81	0.88	Centura Software	2.00	-0.38	-6.9
CHKP	60.50	21.75	Checkpoint Software	36.25	1.94	8.9
CDGNF	59.06	17.63	Cognos Inc.	24.19	-0.69	-2.8
CA	61.50	34.88	Computer Associates	34.50	1.19	2.2
CPWR	53.06	22.44	Compuware Corp	43.06	0.13	0.8
CSRE	13.63	4.25	Corsair Corp	8.38	-0.38	-4.3
COSFF	8.09	1.88	Cosmi Corp	1.97	-0.28	12.5
DWTI	3.50	2.13	Datawatch Technologies Inc	3.00	0.00	0.0
DCTH	39.63	06.75	Documentum, Inc	47.13	2.38	9.3
FILE	66.25	13.13	Filenet Corp	40.06	-6.06	11.0
FFTE	16.50	3.69	Forte Software (L)	6.44	0.13	2.0
FTPS	5.63	1.50	FTP Software Inc	2.88	0.06	-4.4
GPSI	66.75	06.50	Great Plains Software Inc	32.50	1.13	3.5
HUMC	54.25	24.38	Hyperion Corp	27.75	1.25	-4.3
HYSW	48.63	08.13	Hyperion Software Corp	28.06	1.31	5.7
INC	88.00	32.50	Information Resources	11.19	0.00	0.0
IFMX	12.44	4.88	Informix Corp	6.94	0.50	6.5
INPR	12.19	5.88	Inprise Corp	7.06	-0.50	-0.0
INGR	14.19	7.19	Intergraph Corp	9.44	0.38	-0.7
LEAP	9.88	1.88	Interleaf Inc	2.63	0.19	7.7
ISLI	27.25	8.00	Intersolv Inc	14.06	-0.88	5.6
INTU	54.94	22.63	Intuit Inc.	46.63	1.13	2.5
JDEC	42.88	34.88	J.D. Edwards Co.	32.38	-3.06	-8.6
TLC	28.06	7.88	Learning Co (The)	25.81	1.63	5.9
MANU	66.38	28.50	Manugistics Group Inc	32.06	-2.81	11.3
MAPS	14.25	8.88	Mapinfo Corp	11.75	-0.13	1.1
MATH	4.63	2.88	Mathsoft	3.63	0.00	0.0
MENT	12.33	8.00	Mentor Graphics	10.06	-0.22	-2.0
MICF	66.69	06.13	Micro Focus	06.50	5.94	13.3
MCRY	14.06	5.50	Microcrystal Inc.	11.50	0.50	4.5
MSFT	06.13	06.06	Microsoft Corp	04.66	-0.63	-0.7
OBJS	5.25	0.44	ObjectSmart, Inc	2.31	-0.13	5.1
ONTL	15.00	7.13	Ontrol Ltd	9.88	0.13	1.5
ORCL	03.13	17.75	Oracle Corp	34.72	-0.91	3.5
PMTC	35.25	10.06	Parametric Technology	09.25	-2.63	-8.3
PSFT	57.44	25.50	Peoplesoft	42.63	2.75	-0.1
PTEC	10.06	6.88	Progress Technologies (L)	9.19	-0.38	5.8
PSQL	25.00	7.63	Platinum Software	19.63	2.13	12.1
PLAT	31.13	12.63	Platinum Technology	29.75	1.63	-4.7
PRGS	34.63	16.75	Progress Software Corp	05.94	0.00	0.0
RNBO	30.00	16.63	Rainbow Technologies Inc.	22.00	1.75	7.4
RBOW	13.63	6.00	Red Brick Systems Inc	5.25	-0.06	1.2
ROSS	5.06	2.00	Ross Systems Inc.	4.19	0.50	10.7
SCOC	7.25	3.13	SCO Inc	4.44	-0.44	0.0
SDTI	44.88	18.44	Security Dynamics Tech (L)	19.00	-0.51	1.8
SSW	29.50	15.13	Sterling Software Inc.	28.13	-0.44	1.6
SDRC	30.00	15.25	Structr Dynamics Research	23.69	2.94	13.9
SYBS	25.63	6.06	Sybase Inc (L)	6.06	-0.38	-5.7
SYMC	52.63	17.88	Symantec Corp	24.13	-0.75	3.0
SNPS	67.13	29.13	SynOpsys	41.31	1.13	-2.6
SSAX	17.63	6.50	System Software Assoc	6.06	-0.38	11.6
SYSF	14.50	7.06	Systemsoft Corp (L)	7.63	-0.13	-7.7
BANF	55.38	28.50	The Bank Co	44.88	-4.88	-8.0
TRLW	5.19	1.63	Trikon Technologies	1.75	0.31	15.2
VIAS	63.25	12.38	Viasoft Inc (L) *	13.06	1.88	12.6
VSIO	50.88	26.88	Visio Corp	43.50	-0.19	-0.4
WALK	20.94	11.06	Walker Interactive Systems	14.25	-0.38	5.0
WALL	29.13	10.13	Wall Data Inc (L)	10.75	-0.88	7.5
WANG	32.25	13.63	Wang Laboratories Inc	22.50	1.25	5.4
INTERNET						
AMZN	62.63	6.06	Amazon.com (H)	88.88	17.50	80.3
AOL	33.25	26.88	America On-Line	85.88	3.13	3.8
AIMM	47.06	14.63	At Home Corp	34.75	6.88	2.6
EDFY	22.13	8.75	Edify Corp	9.38	-0.13	2.6
XCIT	93.31	12.50	Excite, Inc.	68.06	7.06	15.8
SEEK	45.06	4.38	Infoseek Corp	28.19	5.44	23.9
LCOS	79.11	11.19	Lycos Inc.	50.88	1.88	2.1
NSCP	69.50	14.88	Netscape Comm Corp	23.63	0.44	1.9
NSOL	58.88	11.75	Netscape Solution Inc	38.88	0.13	0.3
ONKT	29.13	8.88	Open Market Inc	15.44	1.63	5.5
PEGS	31.00	12.50	Pegasus Systems	28.88	1.50	5.2
PSIX	15.25	4.25	PSINet	10.44	0.06	0.0
QDEK	3.06	1.19	Quarterdeck Corp	1.28	-0.03	2.4
SCUR	15.25	6.88	Secure Computing Corp	9.13	-0.75	-7.7
SPYG	13.50	4.06	Spyglass Inc	9.94	0.06	0.0
YHOO	129.63	88.63	Yahoo! Inc	112.88	6.50	8.0
SEMICONDUCTORS						
AMD	42.75	16.88	Advanced Micro Devices	16.88	1.50	-8.2
ADI	38.63	22.44	Analog Devices Inc.	22.44	1.81	7.5
CRUS	17.75	6.88	Cirrus Logic (L)	9.88	-0.88	-4.3
CY	18.94	7.88	Cypress Semiconductor Corp	7.50	1.06	11.9
INTC	102.06	65.66	Intel Corp	69.25	-0.81	1.2
LSCC	74.50	25.63	Lattice Semiconductor (L)	27.19	-8.75	-24.5
LSI	38.75	18.63	LSI Logic Corp	22.44	1.06	7.0
MCRL	44.06	21.38	Micrel Semiconductor Inc.	06.75	-2.88	-9.1
MU	88.06	29.81	Micron Technology	88.81	2.88	12.1
MOT	88.50	48.88	Motorola Inc (L)	69.50	2.19	-4.2
NSM	42.88	14.81	National Semiconductor (L)	14.81	1.25	7.8
RMBS	88.75	08.75	Rambus Inc	35.88	-0.63	1.7
TXN	71.25	66.63	Texas Instruments	47.69	2.81	-5.6
VLSI	66.69	14.88	VLSI Technology (L)	15.13	-0.75	-4.7
XLNX	57.13	28.56	Xilinx	32.38	3.25	-9.1
TELECOMMUNICATIONS						
ADPT	34.25	12.31	Adaptec Inc. (L)	13.31	1.06	11.3
APCC	34.88	18.50	American Power Conversion	27.31	-0.50	-2.0
ANDA	2.81	0.94	Andataco Inc.	1.63	-0.00	5.7
CREAF	25.66	12.81	Creative Technology Ltd. (L)	12.81	-4.63	23.7
RACE	16.63	0.69	Data Race Inc. (L)	0.75	-0.00	10.7
DTM	13.63	1.06	Datatran Corp	11.75	-0.25	2.1
EMC	47.61	18.75	EMC Corp	41.63	2.88	-8.3
EMLX	19.75	6.06	Emulex Corp	6.88	-0.75	10.3
ESCC	35.88	21.44	Evans and Sutherland (L)	23.38	2.13	-8.5
EXBT	14.13	5.63	Exabyte	7.50	1.19	13.8
HSFD	6.69	1.38	Interagent Info. Systems (L)	2.88	0.06	2.7
IOM	16.75	5.88	Iomega Corp	6.50	0.34	9.5
KMAC	26.88	6.31	Komag Inc (L)	6.31	1.44	18.5
MTSI	34.88	13.00	Micro Touch Systems Inc.	14.88	-0.44	2.9
MTIC	17.88	4.25	MTI Technology Corp	8.81	1.69	18.9
AQM	23.06	2.25	QMS Inc.	4.19	0.33	8.1
QNTM	43.25	17.75	Quantum Corp.	19.56	-2.13	-9.8
RDUS	8.33	1.88	Radius Inc.	2.41	-0.16	-8.1
SEG	50.50	17.75	Seagate Technology	20.06	1.06	-5.0
SOS	14.00	4.13	Storage Computer Corp (L)	4.25	-0.75	15.0
STK	66.75	39.75	Storage Technology	78.44	3.13	3.8
TEK	48.19	34.88	Tektronix Inc. (L)	34.06	-2.88	7.8
WDC	34.75	00.25	Western Digital Corp (L)	00.50	5.06	82.4
XIRC	315.00	66.19	Xircom Corp	94.56	-8.75	-8.5
MISCELLANEOUS						
AMSY	30.00	17.63	American Mgmt Systems	25.34	-0.66	2.5
ANLY	36.50	30.88	Analysts Int'l	28.19	1.25	-3.8
AUD	39.50	28.50	Auto Data Processing	64.94	-0.53	0.5
CATP	57.50	30.25	Cambridge Tech Partners	40.63	3.75	0.8
CEN	61.88	32.13	Cendant Corp	53.50	2.13	4.0
CDO	46.38	24.13	Compuserve Inc.	34.63	1.00	3.0
CPU	38.88	14.38	CompUSA Inc.	15.75	0.94	-8.6
CHRZ	53.38	25.75	Computer Horizons	34.88	1.31	4.0
CSC	56.75	33.63	Computer Sciences	55.44	2.31	4.6
TSK	49.38	27.00	Computer Task Group	06.25	1.50	-8.6
EGGS	12.75	3.75	Egghead Discount Software	7.31	-0.25	-3.3
EDS	30.88	05.38	Electronic Data Systems Corp	35.31	-0.50	1.6
ICO	39.53	22.63	Imation Corp	00.81	1.19	3.7
IKA	59.44	24.88	Kranz Inc	48.38	4.81	13.0
MICA	29.75	10.06	Micronet Inc.	13.34	0.06	0.1
PAYX	08.88	21.88	Paychex	37.56	-0.44	1.2
PMS	87.00	47.00	Policy Management Sys	63.38	-2.44	-2.9
REY	34.06	13.75	Reynolds and Reynolds	18.75	1.63	-0.0
SAPE	57.06	21.75	Sapient Corp	41.25	5.63	0.1
SCBI	14.75	6.88	SCB Computer Tech Inc	12.25	1.75	16.7
SEIC	79.06	22.25	SEI Corp	61.25	-4.75	7.2
SMS	82.88	47.50	Shared Medical Systems (H)	67.81	3.81	5.3
SSPE	34.25	10.00	Software Spectrum Inc.	19.75	0.75	5.9
SOS	40.06	21.69	Sungard Data Systems	33.44	1.06	5.3
SYNT	39.88	3.88	Synetic, Inc.	22.63	2.25	9.0
VST	17.25	9.38	VanStar Corp	13.69	-0.66	1.5

KEY (H) = New annual high reached in period (L) = New annual low reached in period

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Intel suit doesn't faze users

By Kim Girard

IN THE WAKE of last week's antitrust action filed against Intel Corp., users said they expect no immediate impact on the corporate desktop or their buying plans.

Sure, users would like to see more companies provide cheaper chips or greater innovation, but most don't expect the legal wranglings to affect the Intel chip standard — even if Intel-compatible competitors become freer to compete. After all, they said, Intel will still set the standard.

"I don't think I really care too much if it's an Intel or an AMD chip, providing it meets the performance criteria we have," said John Keast, chief information officer at Pacific Gas & Electric Co., a San Francisco-based energy utility. "Intel is sort of under the covers."

But no one wants a wrenching withdrawal from the safe, comfortable cocoon of the Wintel desktop standard.

"There's something to be said about having a standard, and Intel has a great standard," said John Sweet, vice president of information management at DuCharme, McMillen and Associates, Inc., a tax consultancy in Fort Wayne, Ind.

Lowell General's Ed Bianco: "Intel [isn't] telling anyone how the chip works"

Sweet and others didn't seem fazed by the suit. They contended that the legal disputes with rivals will likely remain separated from Intel's technological innovation.

Some users said Intel's practices were unpalatable, but not enough to change their buying habits. "Someone else needs to worry about whether something was done that had legal or ethical implications. But that's not going to drive me or anyone else from buying an Intel product," Sweet said.

Users were concerned that Intel was blocking innovation from smaller companies that could help improve the PC platform and make for a more competitive market.

"The biggest problem Intel has is they're not telling anyone how the chip works, so no one can work with it," said Ed Bianco, CIO at Lowell General Hospital in Lowell, Mass.

On a Windows NT system, Bianco said, he has little choice but to use Intel processors for compatibility, adding that he would like to have more choice. "I can't buy anything else," he said. "The Alpha chip doesn't run as fast. Unix is the same way. If you want to run NT, you have to run the Intel block."

But other than cheaper Pentium-class processors, what else does the corporate market really need? asked Bob Caplan, information technology manager at John W. Henry & Co., a financial trading company in Westport, Conn. Caplan said he has used both Cyrix Corp. and Advanced Micro Devices, Inc. processors, along with Intel's, and sees little difference in quality.

"It's always a price decision," he said.

Although most users saw the suit as essentially an internal Intel matter, a few said the government's actions against Intel and Microsoft Corp. will have larger repercussions. "Everything is coming to a head," said Susan Molloy, senior systems analyst at the Hospital of St. Raphael in New Haven, Conn. "It's the only way to drive prices down." □

IBM seeks chip sources

By Galen Gruman

IT'S AN OLD FIGHT. When IBM chose Intel Corp.'s 8088 processor in 1983 for its first PC, IBM wanted to guarantee an adequate supply. So it got the rights from the chip maker to make its own processors — as long as IBM didn't sell them to other PC makers.

Intel had earlier given Advanced Micro Devices, Inc. the right to manufacture some 80x86 processors as a second source of chips for other firms.

But later, Intel seemed opposed to second sources. It battled AMD in court for years. In 1993, IBM gave up manufacturing rights to the Pentium rather than accept new terms.

Instead, IBM began an effort to support Intel competitors that continues to this day. In September 1993, six months after the first Pentium shipped, IBM began manufacturing a Pentium competitor: Cyrix Corp.'s 80486 chip. In April 1994, IBM started selling those chips under the IBM label.

In early 1994, IBM and partner Motorola, Inc. delivered the PowerPC as a Pentium alternative that would run Windows NT, OS/2, Unix and Mac OS. Two years later, IBM stopped porting OS/2 because its engineers couldn't make it work on non-Intel chips, and Microsoft refused to let Motorola port Windows NT 4.0.

But IBM hasn't given up. In September 1996, it agreed to manufacture NexGen, Inc.'s Nx586 Pentium competitor. And in March 1998, IBM began producing AMD's K6 competitor to Intel's Pentium II. □

Quips & facts

"What we have here is the Milli Vanilli of semiconductors. Their last original idea was to copy Intel."

— Andy Grove

on the 1991 AMD suit, Chilton's *Electronic News*, Sept. 2, 1991

"We wanted a decent relationship with [Intel], and it didn't make sense to pick a fight with someone that big and powerful. They became rather aggressive about it in 1997 and did some things that were both unethical and illegal."

— James Meadlock

CEO, Intergraph Corp., Huntsville, Ala., *The New York Times*, May 28, 1998

"It's prudent not to ship intellectual property to a company that is going to sue you."

— Chuck Mulloy

Intel, *BusinessWeek*, April 27, 1998 (on the Intergraph suit)

Value of $100 invested in Intel (as of end of fiscal 1997)

5 years ago	$630
10 years ago	$2,078
26 years ago*	$101,250

* At the time of the Intel initial public offering

Source: Intel, Santa Clara, Calif.

"Technology happens. It's not good, it's not bad. Is steel good or bad?"

— Grove,

in *Time* magazine Man of the Year article, Dec. 29, 1997

Intel fun facts:

- Every month, 4 quadrillion transistors are produced, more than 500,000 for every human.
- Intel's workers etch more than 7 million transistors, in lines of 1/400th the thickness of a human hair, on each of its thumbnail-size Pentium II chips.

Source: *Time*, Dec. 29, 1997

Suit

CONTINUED FROM PAGE 1

rights to practice business as it does.

William Baxter, professor emeritus of law at Stanford University and a former assistant attorney general at the Department of Justice, said he believes that forcing companies to open the doors to their intellectual property could have "a disastrous effect on American industry in general."

Baxter also noted that there is no legal precedent for the case the FTC is bringing against Intel because it is based on intellectual property rights.

"The withholding of information is the primary way of enforcing intellectual property rights and could limit the incentive to generate new information since they would have to share it with everybody," Baxter explained.

Even one of Intel's primary competitors, Sunnyvale-based Advanced Micro Devices, Inc., appeared to agree.

"We are for protecting intellectual property rights. Intel has a great patent portfolio, and so do we, and intellectual property is key in this business," said spokesman Scott Allen.

One chip maker official, on the condition of anonymity, said that if the FTC pursues a broader case with Intel, such as looking at how Intel develops its chips, some competitors could come out ahead. Intel typically co-develops with favored vendors, while those that aren't in good graces can be left 16 to 18 months behind schedule, according to at least one chip maker and top PC maker.

Overall, users don't seem fazed by the case. And there is hope a more open market could cut prices.

Given that Intel now holds 90% of the desktop computer processor market, Michael Slater, an analyst at Micro-Design Resources in Sunnyvale, Calif., said he is hopeful that the FTC action could lead to a more competitive market.

But he noted, "The great irony here is that ... Intel is facing more competition now than at any other time in the past."

If anything, it would "give companies like AMD some breathing room," said Chris Goodhue, an analyst at Stamford, Conn.-based Gartner Group, Inc.

For the most part, PC makers have been silent, but officials of at least two said it is business as usual in the industry. Those officials also noted that PC makers have been doing business with Intel competitors AMD and Cyrix Corp. for years.

For example, while Compaq Computer Corp. uses Cyrix, others, such as IBM, Acer America Corp., Fujitsu America, Inc. and Packard Bell NEC, Inc., use AMD processors in their desktop lines. And analysts noted that companies such as AMD have been competing with Intel, both on the Pentium II level and the lower level of Celeron. AMD's K6 and K6-2 compete with those Intel chips. □

& For more news on Intel, see our stocks section on page 110.

Keeping talent in tough times

CONTINUED FROM PAGE 1

But experts said the most effective way to keep valuable IS people during major business shifts is a lot cheaper: communicate.

"It's not so much what you give people; it's how well you communicate with them during the change," said Linda Pittinger, vice president in the New York office of Hay Group, a management consulting firm.

EVERY MEDIUM

During Lockheed Martin Corp.'s merger with Martin Marietta Corp., the company "hit communications on every medium that we could," said Shirley Jones, a human resources manager at Lockheed in Orlando, Fla. Employees learned how the merger would affect them via E-mail updates, company newsletters and face-to-face meetings, she said.

Another example is the merger of NationsBank Corp. and BankAmerica Corp., which was announced in April. NationsBank has been publishing every two weeks a "Merger Update" — available both in print and on the company's intranet. "To date, we don't see any panic," said Jim Howard, senior vice president of technology recruiting at NationsBank.

When longtime CEO Ed McCracken left Silicon Graphics, Inc. (SGI) in October, the company began pumping out daily news updates on its intranet.

"Our goal was to get the most timely information out from the top executives," said Melissa Jones, manager of worldwide employee communications at SGI. She said employees were given the opportunity to provide feedback, "which helped us see patterns and questions that had to be addressed."

When a business is changing, "employees want the big picture, and they want it from top executives, not their immediate bosses," said Gayle Caplan, co-author of the book *Survivors: How to Keep Your Best People on Board After Downsizing.*

However, companies often fail to do that, she said. "Management assumes that employees will ask questions, and employees assume that management will tell," Caplan said.

That trend can be even more pronounced in IS departments, where technical know-how — not communication skills — are most prized.

For many in IS, the prospect of challenging work keeps them at their jobs. And that is often a problem during periods of uncertainty when projects may be on hold or overlapping systems are eliminated.

When a business changes, "those who feel they have the most marketable skills will often go first," said Steve Berman, former managing director of compensation at Price Waterhouse LLP in New York.

"The idea is to give people some control over their own destiny and make them leave more [money] on the table if they do go," he said. For example, Price Waterhouse revamped the way it paid technical people, putting more emphasis on skills than on seniority, during the merger with Coopers & Lybrand and was able to reduce its attrition from about 25% to the "low teens," Berman said.

Lynn Ware, president of Integral Training Systems, Inc. in Half Moon Bay, Calif., recommends that companies develop an IS retention plan nine to 12 months before they announce a major change, whether it be a merger, restructuring or outsourcing deal. "Then identify the folks you're most concerned about losing and find out what kind of aspirations they have," she said.

"Overcommunicate where the company is going," Ware added. If done well, that communication can improve worker loyalty, she said. "In times of crisis, the employees pull together if they have been treated well because they feel they have a way of life to protect," Ware said. □

Customer service on Internet cuts costs

CONTINUED FROM PAGE 1

Internet instead of toll-free lines that companies must pay for.

One example is Hartford, Conn.-based Aetna/US Healthcare, where Internet-based customer service has saved the cost of printing and distributing several million physician directories, according to David Kirshenbaum, general manager of electronic commerce at Aetna. It does so by offering DocFind, a Web-based service that lets customers find general practitioners and specialists in their area. It gets about a million hits per month, Kirshenbaum said.

Despite such savings, early adopters warned that Internet-based customer service isn't a panacea. Because not everyone has access to the Internet, the Web service is seen as an adjunct to the call center and not a replacement.

"There are times when I will use [the Web for customer service], but other times I just want to talk to somebody," said Marvin Chow, a Boston-area resident who has used online customer-service options offered by retailers. "If I'm looking for some information about an item, this is great," Chow said. "But if I have a problem with my bill, I want a person to talk to."

A lot of people feel the same way, according to companies that have installed those systems. As a result, companies often find themselves with dual customer-service applications, which don't always offer the same advice.

That was the case at Aetna. Its core system, based on an IBM DB2 database, was separate from the DocFind application built for the Web. "So it was possible to call the customer-service line, check DocFind on the Web and get two different answers," Kirshenbaum said. The company has since integrated the systems so the data is in sync.

Doing customer service on the Web also changes the job description of the customer service representative. Because a lot of Web-based assistance is done via E-mail and chat, "you have to hire people who can communicate effectively in writing," said Jay Elshaug, service-level manager at First American National Bank. The Nashville bank has offered customer service via E-mail for almost a year. Typically, customers hear back in a day or sooner.

SkyMall, Inc. in Phoenix has been trying live chat software as a means of customer service. Training people accustomed to working on the phone has been one of its biggest challenges. "There's punctuation, grammar, spelling; that's really important," said Annette Marino, electronic-business adviser at SkyMall. "You have to be really cognizant of the way it looks."

Then there is the issue of immediacy. "Unless you have a chat line between the customer and the service provider, you are prolonging the service to get an answer," said Shawn Farshchi, vice president of infrastructure technology and services at DHL Worldwide Express in Redwood City, Calif.

Some users questioned whether Web-based customer service will actually reduce call volumes. "It really just provides another channel for customers to contact you," Elshaug said. "Convenience breeds use."

But users view that increased contact with customers as a good thing because it gives companies another opportunity to market more products and services. □

Web-based customer service challenges

Problem	Solution
Web doesn't replace call center	Integrate data from call center with Web system
Customers may not trust sensitive information to Web	Implement security to put them at ease
Service reps require skills different from those for call centers	Retrain customer service reps

MORE ONLINE

For resource links on Web-based customer service, visit Computerworld online. www.computerworld.com/more

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Dispatches & Images from the Fringes of the Electronic Frontier

News to ponder

The Pentagon is drawing up plans to prevent Russia's nuclear forces from being spooked by the year 2000 bug, Reuters reports. The U.S. is worried about what Russian commanders will do if their attack-warning systems go dark in January 2000, officials said.

Visionics Corp. (*www.faceit.com*) in Jersey City, N.J., has developed face-recognition software that scans crowds and finds people who match a stored mug shot. Linked to a surveillance camera, it could spot a known terrorist in an airport or a convicted shoplifter in a department store.

BEANIE CRAZE GOES ONLINE

More than 50 million Beanie Babies have been sold, and some people cling to the hope that their bean-bag animals will be worth thousands of dollars one day. So Palladium Interactive has developed the first CD-ROM for cataloging Beanie Babies, plus a related Web site (*www.beanieinfo.com*). The site features Beandex, a Dow Jones-like index for tracking the ever-changing Beanie Baby investment market.

LIFESTYLES OF THE NEXT MILLENNIUM

Forecasts by trend-watchers Marian Salzman and Ira Matathia

■ **"Nannycams,"** hidden inside teddy bears, play rooms and child-care centers, will allow working parents to keep an eye on their children.

■ **Company towns** will re-emerge, as high-tech companies lure workers to subsidized homes that are wired to the workplace.

■ **Fully automated bedrooms** will allow us to control lights, phones, drapes, alarms, media units and climate with the touch of a button.

■ **Intelligent wallpaper** using high-tech fabrics will turn every flat surface into a TV/computer screen or art gallery.

■ **Clothing fabric** will be embedded with tiny computers, sensors and micromachines for cooling, heating, periodic self-cleaning and self-repair.

■ **Telecommuters** will cross national boundaries as high-tech and other companies recruit worldwide via the Internet.

■ **Portable hard drives** will allow employees to carry their computer applications and data with them to home, remote offices and airport lounges and simply pop them into a hardware receptacle.

■ **Robots** will dispense gas into your tank, based on preprogrammed information regarding tank location and preferred fuel type.

■ **Intelligent refrigerators** will keep track of inventory, so the homeowner can print out a grocery-shopping list and send it to an online shopping service.

Source: *The Futurist*, World Future Society, Bethesda, Md.

Inside Lines

An Alpha standard bearer

Digital's Alpha chip has found a new standard bearer in Samsung Electronics. The Korean manufacturer, which has Alpha licensing rights, Tuesday will announce the formation of a new subsidiary, Alpha Processor, Inc. Apart from trying to win more customers for the chip, the Samsung subsidiary will try to rope in more application developers to the Alpha platform.

What's another word for "direction"?

Somebody at Microsoft clearly needs Viagra. One of Office 97's peculiarities is how it handles a specific string of words when you ask for a thesaurus check. Open up a new document and then type in "unable to follow directions," and highlight the string of words. Then click on the "thesaurus" functions. One of the synonyms the program gives relates to male sexual dysfunction. A Microsoft spokesman said have no fear, the whole phrase will be erased in a service release this summer.

Credit-card companies look at E-payment fees

Rumors abound that Visa and MasterCard are about to lower the fees they charge credit-card clearinghouses for handling electronic transactions. The two credit-card giants are pushing the Secure Electronic Transaction (SET) protocol and guaranteeing payment for purchases using SET, which they don't do for non-SET online transactions. But their fees for SET transactions are now higher than for transactions using a store's card reader, even though they are equally secure. The card companies will say only that they are looking to entice more merchants to use the SET protocol.

It's a small world

By the time San Francisco-based Wells Fargo completed its $11.3 billion hostile takeover of First Interstate Bancorp in 1996, nearly all of First Interstate's top IS executives had grabbed at Wells Fargo's lucrative severance package and jumped ship. Among them was Webb Edwards, formerly the IS chief at Los Angeles-based First Interstate, who left to become the top technology honcho at Minneapolis-based Norwest. Guess who announced a $34 billion merger last week with Wells Fargo (see story, page 6)? Maybe the U.S. banking industry really is shrinking.

He's rare, all right

We knew that database administrators are a hot commodity, but we were surprised by consecutive press releases recently issued by Rare and Dear, Inc., a Kauai, Hawaii-based IT consulting firm. A release dated June 3 announced that one of Rare and Dear's consultants had received his Oracle database administrator certification — the second person in the state to do so. It was followed the next day by a release saying that the newly certified consultant had resigned from his job.

Quick on his REC

Talk about quick recoveries. "Shannon Knows DEC," a newsletter that has tracked Digital Equipment Corp. for years, has re-engineered its title in the wake of the company's merger with Compaq Computer. Editor Terry Shannon said he will continue with its old name, except that DEC will now stand for Distributed Enterprise Computing.

Stuart Bowyer, a graduate astronomy professor at the University of California at Berkeley, accepted the Computerworld *Smithsonian Award in the Science category for the school's Search for Extraterrestrial Radio Emissions from Nearby Developed Intelligent Populations. The project uses specialized circuits to match the processing speeds of 200 supercomputers to search 168 million chonnels of astronomical data at once in the search for extraterrestrial life intelligence. "We haven't found anything yet, but we haven't given up hope," Bawyer said. "When we do, you'll be the first to know." Let us know what you've found. Contact news editor Patricia Keefe at patricia_keefe@cw.com or (508) 820-8183.*

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